# THE NEW MUSICAL EDUCATOR

# THE NEW MUSICAL EDUCATOR

EDITED BY

**HARVEY GRACE**

MUS.D. (CANTUAR.), F.R.C.O.
ORGANIST AND DIRECTOR OF MUSIC, CHICHESTER CATHEDRAL
EDITOR, MUSICAL TIMES

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# PREFACE

" The New Musical Educator " is best regarded as a collection of instruction books. Any question as to the practical value of such a collection is answered by the steady demand for the work, from its first appearance until the present time. But the conditions of the musical world have changed in regard to methods of instruction no less than in other directions, and so the time has come for a new edition in which not only the methods but even the choice of subjects should be thoroughly revised. Mere revision, however, has proved to be insufficient in regard to certain subjects (*e.g.* orchestration, pianoforte playing, and composition) wherein the outlook and methods have in recent years undergone changes that may fairly be described as revolutionary.

The majority of the more important sections of the book are, therefore, entirely new ; such of the old articles as remain have been revised, and in some instances enlarged and partly re-written ; and a number of articles have been added. Among the fresh subjects treated are the dance band, acoustics, the training of choirs of men and boys, female voices, and men's voices, the viola, orchestral conducting, the musical training of the young, etc. The present edition, therefore, differs so largely from its predecessor that it is, in effect, a new work, and so justifies its fresh title. Mention should here be made of the names of those whose valuable contributions to the former work have been revised and extended for inclusion in " The New Musical Educator "—J. S. Anderson, Mus.Bac., W. Daly, Jun., J. C. Grieve, F.E.I.S., J. Cuthbert Hadden, F. Laubach, John Robertson, Mus.Bac., and James Sneddon, Mus.Bac.—all undoubted authorities on the subjects on which they wrote.

If there was room for such a work in the past, there ought to be even more to-day, when the musical public has increased a hundredfold owing to the widespread interest in music brought about by broadcasting. That this newly aroused interest should kindle in many people a desire to become music-makers as well as music-hearers is to the good of the musical life of the country ; and there is the further consideration that even a modest degree of practical knowledge and ability greatly improves the capacity of listening with understanding, and with the increased pleasure that understanding ensures. To all such potential musicians " The New Musical Educator " should prove a boon.

More directly, however, the work is designed (1) for the use of students who are unable to obtain the services of a teacher, or whose opportunities of personal lessons are limited ; (2) as a supplementary means of instruction for students receiving tuition ; (3) for the provision of " refresher " courses for musicians whose pupillage is over ; and (4) as an aid to teachers who, specialising in a particular subject, wish to add secondary subjects to their equipment. The musicianship and experience such teachers have already acquired enable them to take up a further study with good prospects of success.

Harvey Grace

# CONTRIBUTORS TO "THE NEW MUSICAL EDUCATOR"

W. R. ANDERSON

*Mus.B. (Dunelm) ; L.T.C.L., L.R.A.M., etc. ; Lecturer, London University Extension Board.*
*Music Critic and Reviewer, " Musical Times," " Observer," etc.*

F. BONAVIA

*Music Critic, " Daily Telegraph." Formerly on staff of the " Manchester Guardian."*
*Violinist for ten years in Hallé Orchestra under Richter ; etc.*

P. C. BUCK

*M.A., Mus.D. (Oxon), Hon. M.A. (Dublin).*
*Professor of Music, London University ; Musical Adviser, L.C.C.*

JAMES CHING

*Mus.B. (Oxon), F.R.C.O.*
*Professor of Pianoforte and Author of Text-books on Pianoforte Playing.*

CARL FUCHS

*Professor at Royal Manchester College of Music.*
*For many years a member of the Hallé Orchestra under Sir Charles Halle.*

GEORGE GRACE

*Mus.D. (Oxon), A.R.C.M. (Teacher of Singing), etc.*

HARVEY GRACE

*Mus.D. (Cantuar.), F.R.C.O. Organist and Director of Music, Chichester Cathedral.*
*Editor, " Musical Times."*

JULIUS HARRISON

*Hon. R.A.M. ; Conductor of Hastings Municipal Orchestra.*

W. McNAUGHT

*Music Critic, " Glasgow Herald," " Evening News " (London).*
*Assistant Editor, " Musical Times," etc.*

W. G. WHITTAKER

*Mus.D. (Dunelm) ; Hon. Mus.D. (Edinburgh) ; M.A. (Glasgow). Professor of Music,*
*Glasgow University ; Principal, Scottish National Academy of Music.*

DENIS WRIGHT

*Mus.B. (Dunelm) ; Editor of Brass and Military Band Music ;*
*Adjudicator at Band Contests, etc.*

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# THE NEW MUSICAL EDUCATOR

## VOL. I

## INTRODUCTION

## HOW TO USE THE EDUCATOR

THE old saying, " The self-taught man has a fool for his teacher," is less true to-day than formerly, because science has come to the aid of the many who, for various reasons, are compelled to study without the direct aid of a master. The wireless, gramophone and player-piano; the public library and lecture; the cheap technical journal and textbooks; and, not least, comprehensive works such as the present—all these place within easy reach of the student an abundance of instructive means undreamt of twenty years ago.

Nevertheless, such lavish facilities have their dangers. They tempt the reader to be casual and hasty rather than studious. Browsing is good, but not as a habit: it should be a kind of background from which solid work stands out in relief. The " New Musical Educator " is not a reading-book but a set of study-courses: it may be read in a week or so, but used properly it contains material for years of work. Even as I write this, however, I remember being told by one of the contributors to this edition that he came across the " Musical Educator " in his boyhood and read it, entranced, from start to finish: counterpoint, military-band scoring—nothing came amiss to him. Much was over his head, but there was left a general impression that played its part in developing his musicianship and ambition. Let the youngsters roam at large through the " Educator," then; but for adults the motto should be, " One thing at a time." As, however, no branch of music is entirely self-sufficing, the motto should be relaxed sufficiently to enable the reader to profit from the light that kindred subjects throw on one another.

Like the students at a college of music, he should take a second study, preferably one that will provide both relief and aid to the first. For example, an organ student should be conversant with the fundamentals of piano playing and with a good deal of the pianoforte repertory. Regular piano-playing will not only facilitate the overcoming of difficult manual passages in organ music; it will also make him strong where unrelieved organ playing will leave him weak, *i.e.*, in rhythm, phrasing, and variety of touch. Again, a singer should aim at being at least a fair pianist, as a help in his study of songs; the playing, if need be, of his own accompaniments; and, above all, as an aid to general musicianship. And (it ought to go without saying, but it doesn't) every musical performer should be familiar with the elements of music, and should possess a good working knowledge of harmony up to and including chords of the seventh.

The student working without a teacher is apt to overlook the importance of revision. There is no real progress in study without a systematic method of consolidating the ground won. A periodic going back on one's tracks will not only strengthen the student's hold on what he has learned; it will also make clear a good deal that was only partially grasped at the first attempt.

The fundamentals of a subject often give the student more difficulty than the later stages, probably because he is apt to be misled by their apparent simplicity; moreover, they are less interesting, and the results make a comparatively poor show. The wise student will therefore keep in touch with the fundamentals even after he has left them so far as actual work is concerned: many a chapter I re-read has fresh light thrown on it from some passage in a subsequent chapter. Similarly, each fresh stage should be backed by a revision of the preceding stage: there is no real, fruitful progress (let it be repeated) unless the ground previously won is consolidated in this way.

Cross-references are sometimes given: the reader should add to these. For example, the wind instrument section of the Orchestration article should be supplemented by that on the Military Band; and even the Dance Band article may yield something to the "straight" orchestrator.

Again, the choral conductor should refer to the article on orchestral conducting for such technical points as the management of the baton, the correct signs for the various time-divisions, etc.* The trainer of equal-voice choirs—boys-and-men, male-voice and female-voice choirs—should study the chapter on The Choral Society for the fundamentals which apply to all types of choral singing. There is, in fact, scarcely an article that is not complementary to another—often to several others.

The making of notes is another valuable aid. Use a substantial manuscript book, indexed, and copy therein salient points, to which reference can be made easily. The most useful feature about note-making is that the act of copying is an invaluable aid to memory: a single thoughtful writing-out of a passage is worth several readings-over.

Finally, there should be ample reading of musical literature and journals. The section "The Musician's Bookshelf" is designed to aid in this matter.

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* Many choral conductors dispense with the baton when directing unaccompanied singing, and the beating is often that of the phrase rather than of the bar; nevertheless, the general technique of conducting should be mastered as well.

## CHAPTER I

# RUDIMENTS OF MUSIC, OR MUSICAL NOTATION

### DEFINITIONS.

| | |
|---|---|
| A note . . . . | A sign to represent a sound. |
| Pitch . . . . | The comparative height or depth of a sound. |
| Interval. . . . | Difference in pitch between any two sounds. |
| Harmony . . . | Tones sounded in combination. |
| Diatonic . . . | Belonging to a certain key. |
| Chromatic . . . | Literally, *coloured*. In practice, notes additional to those of the diatonic scale. |
| Enharmonic . . | A change in name but not in pitch ; or more correctly, the change in pitch is not generally perceptible to the ear. |
| Key . . . . . | Notes of a scale arranged in relation to a certain Tonic or Keynote. |
| Open score . . . | Arrangement on separate staves of different parts, as Soprano, Alto, Tenor, Bass, to be performed at one time. These parts are generally bracketed together. |
| Short score . . | Four distinct parts written or printed on two staves. |
| Treble . . . . | The highest voices of women and boys. |
| Contralto (Alto) . | The lowest voices of women and boys. |
| Tenor . . . . | The highest voices of men. |
| Bass . . . . | The lowest voices of men. |

### INTRODUCTORY.

**1.** Sounds of every kind are the result of vibrations or waves of the atmosphere. When these vibrations are regular and continuous, a musical sound is produced. When the vibrations are irregular, the result is noise.

**2.** " Musical notation " may be defined as the means whereby, by certain signs or symbols, we represent to the *eye* sounds which, as the word implies, are to be heard. Thus in music, as in other arts and sciences, one sense, under mental guidance, is ready, often, as it would appear, *anxious*, to minister to the pleasure and instruction of another. In the " Braille " notation for the blind, another of these " gateways of knowledge," *viz.*, the sense of touch, is brought in to make good, in some measure at least, the absence of sight.

**3.** Musical sounds may vary in many particulars, the most prominent of which are—(1) height or depth, according as they are the result of very rapid or comparatively slow air-vibrations, technically called " pitch " ; (2) length or duration, as one sound may require to be sustained two, three, or four times as long as another ; (3) tone-relation, generally spoken of as key or scale relation ; (4) accent and rhythm, which are known as " time " in music ; and (5) quality of tone (French, *timbre*, " stamp " ; German, *Klangfarbe*, or " sound-tint "), as one sound may be pleasing, another harsh and disagreeable, one sharp and piercing, another dull and heavy, and so on. The last of these particulars may be heard, felt, imagined, or described ; but it cannot be *noted*—at least no notation of it has hitherto been attempted ; and it therefore cannot properly be treated under this heading. It may here, however, be stated that *amplitude* in the sound-wave gives loudness or force, *rapidity* gives pitch, and *form* gives tone-quality. Let us endeavour to explain the notation for the first four particulars in the order named.

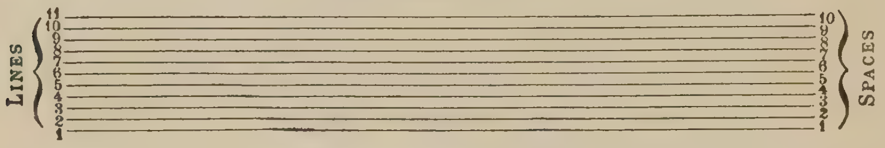
## NOTATION OF PITCH.

**4.** Shrill sounds, as those produced by touching the keys of a pianoforte towards the right-hand side of the player, are said to be " high in pitch " ; those produced towards the left-hand side of the same instrument, duller, heavier, and more sonorous in effect, are " low in pitch." The difference between *loud* and *high* should be carefully distinguished. We may have a soft *high* sound, and a loud *low* sound, and *vice versâ.* Loudness and softness are often spoken of as " volume of tone."

**5.** The relative pitch of musical sounds is made clear to the initiated by the position of certain characters called " notes," which are placed (written or printed) on parallel and horizontal lines, and on, or in, the spaces between those lines ; which lines and spaces are termed collectively, a staff or stave—we prefer the first word, because the second is often used in another musical sense.

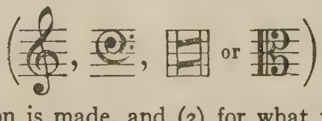
The staff is frequently said to consist of five lines and four spaces ; but this may be pronounced a popular mistake, as such a staff is, in reality, only a *part of the whole.* In its entirety the staff consists of *eleven* lines and *ten* spaces, the usual name for which is—

THE GREAT STAFF

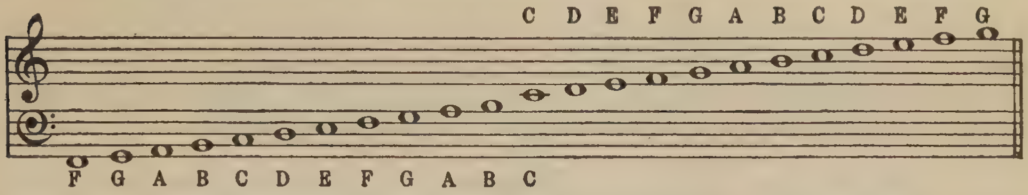


Lines and spaces are always counted from below upwards. Thus the lowest line is the first line, the lowest space is the first space, and so on, proceeding to the eleventh line and tenth space. The use of a staff of only five lines and four spaces is accounted for in this way :—

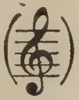
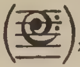
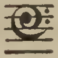
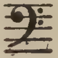
**6.** Human voices and orchestral instruments may be broadly divided into four classes, *viz.*, (1) sopranos or trebles, the voices and instruments highest in pitch ; (2) contraltos, generally pitched a fifth below the sopranos ; (3) tenors, an octave below sopranos ; and (4) basses, a fifth below tenors, or an octave below contraltos. Taken altogether, the compass, *i.e.*, the number of notes producible by these voices or instruments, is so large that the great staff is fully required ; but *no single voice* or instrument (except the organ and pianoforte) requires at one time *all* the lines and spaces of which this great staff consists. For those low in pitch, therefore, a selection of the lowest five lines and spaces of the great staff is made ; and in the same way, for those highest in pitch, the upper five are set apart ; the middle line, called from its position, *middle C*, being left unwritten, or employed as an additional *leger* or helping line above the lower five-line staff, or below the upper, as occasionally required. In the same way a selection of a five-line staff is made from the *centre* of the great staff for those voices and instruments which are of medium pitch. Thus every voice and instrument has its own particular staff, much space in printing is saved, and great confusion to the eye is avoided. The different five-line staves are distinguished thus :—

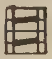
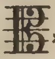
**7.** At the beginning of every " score " (see " Definitions," page 3) and part of a score, a certain figure called a clef  is placed to show (1) from what part of the great staff the selection is made, and (2) for what voice or instrument the particular piece or part is intended.

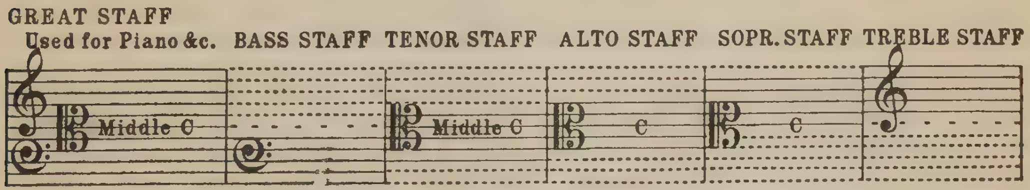
**8.** The names and functions of the different clefs will be better understood if it is here stated that all lines and spaces are named from the first seven letters of the alphabet, which are repeated over and over again as required, and as shown in the following illustration:—



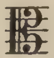
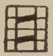
Middle C line is here printed short, and named twice to call attention to the fact that it is above one five-line staff and below another. It is generally, as already stated, only printed when required.

The treble or G clef, so called because it is used (1) to show the upper lines of the great staff, and (2) because the turn of the sign () is made round the second line of this staff, which is named G, and the bass or F clef, (), so called (1) because it shows the lowest five lines, and (2) because the  or  turns on the fourth line of this staff, named F, both of which are shown above, are the two clefs most frequently employed. Both the G and F clefs are ornamental developments of the capital letters G and F. The connection is not easily perceived in the modern forms, but it is apparent in old manuscripts.

**9.** Four distinct harmonic parts are frequently printed on these two staves (see "Definitions," "short score," page 3); but when a separate staff is required for each vocal or instrumental part, middle C is taken as a *new clef* note, the clef sign being  or , and a new five-line staff, drawn from the centre of the great staff, is constructed to meet the wants of contralto and tenor voices, and instruments such as the viola, which take corresponding parts in the harmony. The relation of this C clef to the others may be tabularly shown thus:—



Here the lines are to be considered as if they had been drawn right along. The lowest voices and instruments, as already explained, use the five lower lines with their spaces between; the tenor, being higher in pitch, does not require the lower two lines of the bass staff, and takes instead middle C and the lowest line, E, from that of the treble; the contralto (often called alto), being still higher, leaves off the third line of the bass, and takes yet another line from the treble; the soprano, being still higher, middle C is taken as the lowest line of its staff, and the first four of the treble are added to complete it; the treble, as has just been shown, uses the upper five lines; and thus every voice and corresponding instrument has its special five-line staff.

**10.** It may be mentioned that in former days other clefs were employed, but those just given include all that are usually seen in modern times. Even the soprano, here exhibited, has fallen into disuse, Mendelssohn being perhaps the last great composer who used it to any extent; so that for all practical purposes, four, *viz.*, treble, alto, tenor, and bass, are all the clefs with which the modern musician requires to be thoroughly familiar. The chief difficulty in connection with this will be found in relation to the C clef, the best way to master which is to remember that the sign  or  on *whatever part* of a five-line staff it may appear, always shows *middle C of the great staff*. Horizontally, this musical fact can be made plain by means of the following illustration: Let eleven pupils stand in a row, the pupils representing the lines, and the spaces between them the spaces of the great staff :—

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Lines,** | **G** | | **B** | | **D** | | **F** | | **A** | | **middle C** | | **E** | | **G** | | **B** | | **D** | | **F** |
| **Pupils,** | ● | | ● | | ● | | ● | | ● | | ● | | ● | | ● | | ● | | ● | | ● |
| **Spaces,** | | **A** | | **C** | | **E** | | **G** | | **B** | | **D** | | **F** | | **A** | | **C** | | **E** | |

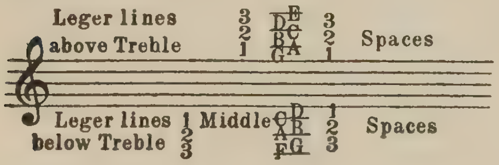
Very little thought is required to bring home the fact that *any five* of these pupils (dots) may be selected to make a group or five-line staff, as F, A, middle C, E, G ; or D, F, A, C, E. In the one case, middle C will be third ; in the other, fourth in the group ; but in both it would represent the *same individual.*

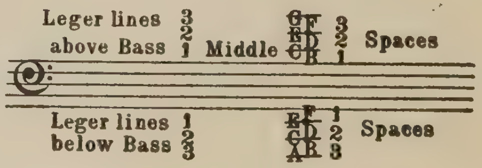
Music for the tenor voice is now usually written or printed on the treble staff ; when, as the male voice is usually pitched by Nature an octave below that of the female, the music is really performed eight notes lower than its appearance would indicate. The contralto part is always sung or played as printed.

**11.** The letter-names of the lines and spaces used with the different clefs should be as familiar to the musical student as the multiplication table is to the arithmetician, and should be committed to memory in the same way. Names of the lines and spaces for the four clefs in ordinary use are here given, viz. :—

| | | |
|---|---|---|
| Treble clef | . . . | Lines E G B D F |
| „ „ | . . . | Spaces F A C E |
| Alto „ | . . . | Lines F A C E G |
| „ „ | . . . | Spaces G B D F |
| Tenor „ | . . . | Lines D F A C E |
| „ „ | . . . | Spaces E G B D |
| Bass „ | . . . | Lines G B D F A |
| „ „ | . . . | Spaces A C E G |

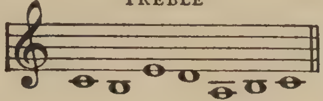
**12.** Not unfrequently the different voices or instruments demand a wider range or compass than the ordinary five-line staff affords, as the treble may require to go above its upper line F, or the bass below its lower line G, in which case or cases additional lines and spaces are employed to serve the *temporary* purpose. These, called *Leger* lines (French, *leger* " light "), are always written short, and are always, with the spaces between them, counted *outwards* from the staff, whether used above or below it. Letter-names for leger lines and spaces are obtained by simply continuing the series formerly mentioned, upwards or downwards as required, and as here shown :—



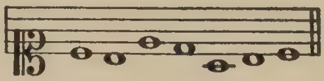


Leger lines and spaces for contralto and tenor are, as will now be understood, an appropriation, for the time, of others, above or below, which belong to the great staff ; being taken from the treble clef in going up, and from the bass when coming down.

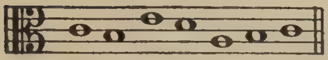
**13.** Still further to assist the student in gaining a clear insight into the uses of clefs and their relation one to another, we give here a short series of notes at *the same pitch,* in the five exhibited on page 5 (see par. 9).



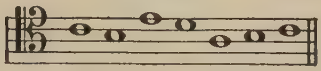
TREBLE



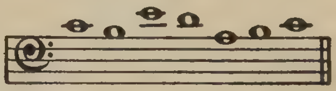
SOPRANO (seldom employed)



CONTRALTO



TENOR



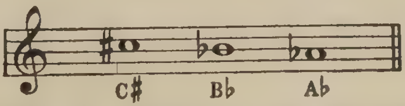
BASS

Exercises of this kind may be continued by the student with great advantage. It will be seen that by the use of the C clef many leger lines are avoided.

**14.** Names for the different voices, something of the power pertaining to each, and their compass as a whole were given and explained in par. 6, from which it will be seen that middle C is, in pitch, about midway in the series of sounds that can be produced by ordinary singers collectively considered; and is to be found somewhat high in the voices of men, and rather low in those of women and children. Being thus "middle" in a double sense, this C is taken by musicians as the "standard of pitch," that is to say, it is made the starting place or point of departure from which all other musical sounds are measured. An elastic body giving 256 *complete, i.e., double* vibrations in a second of time, will produce this sound—to be heard most conveniently, perhaps, from the centre C in a pianoforte key-board. With this tone sounding in our ears, the figure with notes and letter-names given in par. 8 shows in notation, to some extent at least, the natural and consecutive order in which the other so-called scale sounds are to follow, ascending or descending.

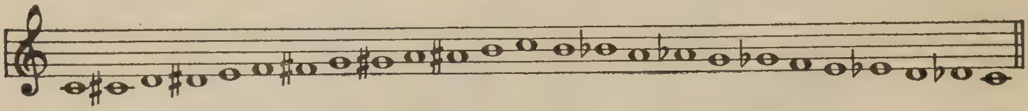
**15.** If, however, we listen attentively to a singer or player as this scale is performed, we shall hear for ourselves (or if not, we must be told) that the distances between these scale sounds are *not all alike,* the distance (technically "interval") between the couples E F and B C being in each instance little more than half what we may hear in the others. On the pianoforte key-board it may be observed that there are no black keys between the white keys corresponding to the letter-names just given.

**16.** It is found in practice that these shorter distances, "half-tones" or "semitones," can be readily recognised by ordinary ears; and so, for reasons which will be best understood when we come to speak of tone-relation, signs or characters (corresponding to the black keys of the pianoforte) have been invented in order that these semitones may be introduced wherever required. Thus we can not only have C, but C sharp (written C♯); not only B, but B flat (B♭); and so with all the other letter-names and corresponding notes. Let it be observed that in speaking or writing of notes inflected (raised or lowered in pitch) by sharps or flats, we generally *say* or *write* C sharp (C♯), B flat (B♭), or A flat (A♭), naming or placing the inflecting sign after the note; but in notation we *always* place the inflecting sign, flat or sharp, or the sign which does away with the effect of either, called a natural (♮), *before the note* inflected.



**17.** The figure in par. 8 gives what is usually termed the natural scale, *i.e.,* a scale whose notes are not altered by sharp or flat, equivalent to the series of white keys on the pianoforte.

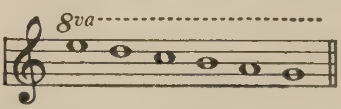
The following figure gives a specimen of what is called the *chromatic* (Greek, "coloured") scale, the different notes having greater distances (black keys) between, being raised by sharps going up, and lowered by flats coming down. It may be called the melodic chromatic scale.



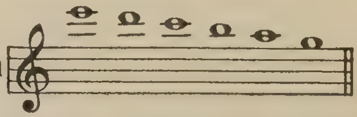
What are called a double sharp (X) and a double flat (♭♭) will be best understood when key-relation has been explained.

**18.** To save the trouble and confusion that the use of a great many leger lines is apt to create, a passage or series of notes is often printed an octave (eight notes) lower than it is to be played or sung, when the sign 8ve or 8va (often simply 8 with dotted lines along to the point desired, as 8............) is printed above, to call attention to what is intended.

**A passage written in this way—**

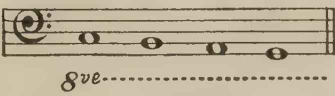


**Would be performed thus—**

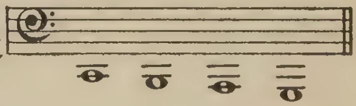


The sign 8ve or 8va *bassa* written below the staff indicates that the passage is to be sung or played an octave lower than printed; but this device is not so frequently required.

**The following, written thus—**



**Would be performed in this way**



At the conclusion of such a passage the word *Loco* ("place") shows that the notes from that point onwards are to be played or sung as written. In pianoforte and organ music the sign "8va below" is often used to indicate that the notes printed are to be played *along with* those an octave below, in which case the Italian word *Con* (with) ought to be put before the sign as *Con* 8va...

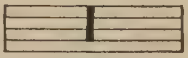
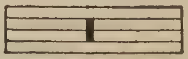
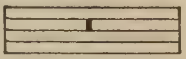
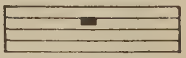
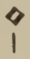
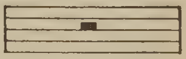
### DURATION.

**19.** In every work of art something in the nature of variety is requisite; sameness cannot be tolerated. Thus the painter seeks variety by change of colour, subject, and style of treatment; the sculptor, by outline, general character, and ornamentation; and one of the many sources of variety open to the musician is that the various parts of his or her composition shall not all be sustained in sound for the same length of time.

**20.** From the earliest days of writing music, certain symbolic figures called *notes* have been employed to give (1) some general idea of the actual time required in performance, and more particularly (2) the *relative* duration of each. See par. 3.

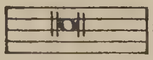
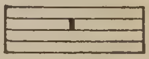
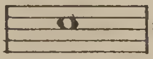
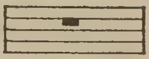
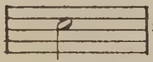
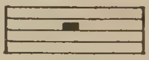
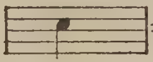
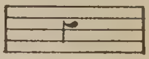
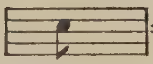
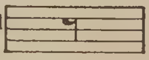
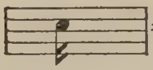
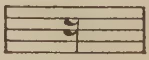
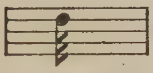
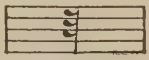
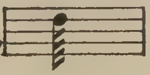
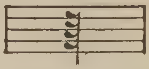
**21.** Like nearly everything else that has come down to us from our forefathers, these notes have not been brought to what we may consider their present state of, at least, comparative perfection without having undergone many changes. At various periods they have, so to speak, assumed different shapes. At one period what has been called the diamond form of note (◇), obtained; hence, as some authorities say, arose the term "counterpoint;" for when more than one harmonic part was printed, the points of the notes were set against or *counter* to each other (◇ ◇) *point counter point*, or counterpoint, the earliest examples of what is now understood as harmony.

**22.** Later in their history, to continue the figure of speech, these notes took unto themselves what may be called an assortment of appearances, being shaped, named, and related to each other as here shown :—

| | | | |
|---|---|---|---|
| 1. **Maxim (greatest),** - - | | = two Longs. Sign of rest or silence for Maxim, - - - - - - - - |  |
| 2. **Long,** - - - - - - | | = two Breves. Sign of rest or silence for Long, - - - - - - - - - |  |
| 3. **Breve (short),** - - - | | = two Semibreves. Sign of rest or silence for Breve, - - - - - - - - |  |
| 4. **Semibreve (half short),** - | | = two Minims. Sign of rest or silence for Semibreve, - - - - - - |  |
| 5. **Minim (least),** - - - |  | Sign of rest or silence for Minim, - |  |

According to this table, one maxim would be equal to two longs, or four breves, or eight semibreves, or sixteen minims. The above will also call attention to the fact that just as notes are required to represent sounds, so from the earliest days signs have been required to represent corresponding "rests" or periods of silence. These are always called "rests," and named after their respective notes. As will be seen presently, some of the above signs and names are still retained; but to the eyes of modern musical students, most of them have a somewhat unwieldy appearance, and have been discarded in favour of others which take up less time in writing and occupy less space in printing.

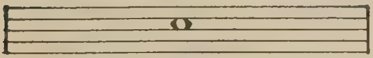
**23.** The notes and rests now in use are shaped, named, and have relative value as follows :—

| | NOTES | | RESTS |
|---|---|---|---|
| 1. **Breve,** - - - - |  | = two Semibreves. Breve rest fills the space, - - - - - - - |  |
| 2. **Semibreve,** - - - |  | = two Minims. Semibreve rest *below* the line, - - - - - - - |  |
| 3. **Minim,** - - - - |  | = two Crotchets. Minim rest *upon* the line, - - - - - - - |  |
| 4. **Crotchet,** - - - |  | = two Quavers. Crotchet rest turned to *right*, - - - - - - - |  |
| 5. **Quaver,** - - - - |  | = two Semiquavers. Quaver rest turned to *left*, - - - - - - - - |  |
| 6. **Semiquaver,** - - - |  | = two Demisemiquavers. Semiquaver rest *two* heads to left, - - - |  |
| 7. **Demisemiquaver,** - |  | = two Semi-demi-semi-quavers. Demi-semiquaver rest *three* heads to left |  |
| 8. **Semi-demi-semi-quaver,** |  | Shortest note. Rest *four* heads to left, - - - - - - - - |  |

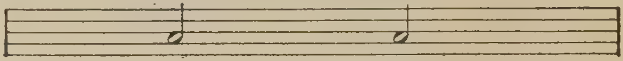
The first and the last of these notes are seldom required. The breve occasionally appears in what is called sacred music, and the "shortest note" in very rapid music for instruments; but, as a rule, they are not found requisite. The student should carefully observe the *appearance* of every note and rest; and their relative durations or values should be summed up in some such sentence as this:—One semibreve is equal to two minims, four crotchets, eight quavers, sixteen semiquavers, or thirty-two demisemiquavers. Conversely, the minim is half a semibreve; the crotchet is half a minim, or the fourth part of a semibreve; the quaver, one-half of a crotchet, the fourth of a minim, the eighth part of a semibreve; and so on downwards to the shortest note.

The Germans, after them the Americans, have adopted the following terms or names for duration values and proportions. The various groupings show the different ways in which the quaver and shorter notes are or may be printed:—

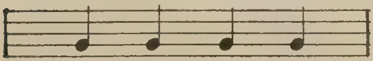
SEMIBREVE- the whole note, or 1



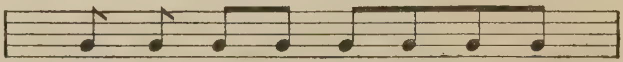
MINIM- the half-note, or 2



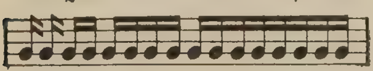
CROTCHET- the quarter, or 4



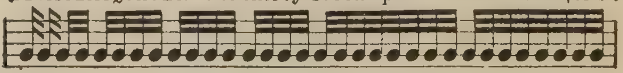
QUAVER- the eighth, or 8



SEMIQUAVER- the sixteenth, or 16



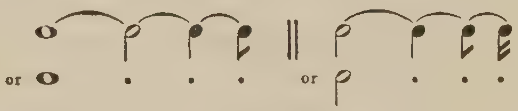
DEMISEMIQUAVER- the thirty-second part of a Semibreve, or 32



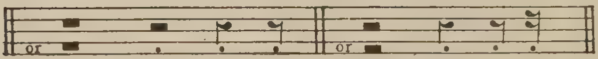
The above will be found extremely useful when the student comes to the section on "Accent and Rhythm" in this chapter (page 25).

**24.** A dot placed after *any* note lengthens that note by one-half. Thus a dotted semibreve is equal to three minims (𝅝· = 𝅗𝅥 𝅗𝅥 𝅗𝅥), a dotted minim is equal to three crotchets (𝅗𝅥· = ♩ ♩ ♩), a dotted crotchet to three quavers, &c. A *second* dot after a note is *half as long* as the *first*, and a *third*, *half as long as the second*. A double-dotted note therefore is equal to one and three-quarters, and a treble-dotted note to one and seven-eighths of the original. Dots placed after rests affect *them* in the same way, but are not so frequently used, the rest for the note next in value being in general written instead.

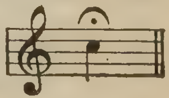
**25.** A tie, or bind (𝅗𝅥‿♩), is often employed instead of a dot, and serves the same purpose so far, in that it shows that the sound represented by the note is to be sustained—*not re-struck*—by voice or instrument. The following illustration shows the relation of ties and dots with notes and rests:—



RESTS

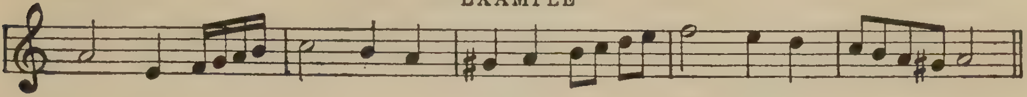


It may be mentioned that more than two dots are very seldom written. When a note is to be held or a rest observed for an indefinite time, this sign, called a pause, or hold, is put over it—



**26.** In writing or printing, stems of notes may be turned up or down, or when hooked (as in the quaver) may be grouped, as shown in par. 23, without altering their time or duration value. When each part has a staff to itself, however, it is usual, in order to preserve uniformity, to turn the stems up from the first to the third lines inclusive, and from the third space upwards to turn the stems down.

EXAMPLE



## TUNE, OR TONE RELATION.

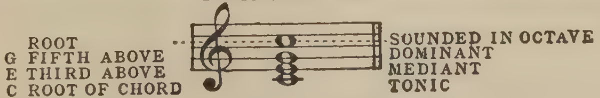
**27.** A series of seven consecutive sounds, standing, if we may so speak, at certain distances *from* and performing certain functions *for* each other, is termed a musical scale. Proceeding, in pitch, above or below these seven sounds, we simply repeat the same over again with the interval (distance) of an eighth or octave between, which in effect is so like the first—being the resultant sound of exactly double the number of vibrations in any given time—that musicians have come to regard the octave, or any succession of octaves, as the *same sound*, only higher or lower. Thus C in third space, treble clef, is a repetition of middle C, *an octave higher*; D fourth line is a replicate at the same interval of D in the space below its lowest line; and so with all the other scale sounds, whether high or low.

**28.** Just as in every well-governed state there must be law and order, some individuals born to bear rule, many to be under authority, but *all* more or less dependent one upon another, so, in this realm of music, some sounds, although by no means independent, perform, for the time being, functions more important than others; while even what may be called the humblest sound in the scale ministers to the general effect in such a manner as to make it almost, if not altogether, indispensable. Before we can have a tune we must first, either mentally or audibly, elect or select a "Governing Sound," or, as it is usually called, a "Key-note" or "Tonic." The former of these names really describes best the position which this sound occupies in modern music; but by the latter it is known universally, and we shall therefore here adopt it. This tonic, heard or imagined at the beginning of the tune, heard very frequently as the tune proceeds, and very prominently when it closes, is the sound around which the other six scale sounds may be said to revolve, each in its proper sphere, and upon which they all depend for musical life and power of expression. The tonic may be any sound, high or low in pitch, that we choose; but it will be convenient for us meantime to put middle C into that important place.

**29.** At the interval of a fifth above or a fourth below this C tonic, we find the tone most like it in effect and next to it in importance; which, from its predominating influence in the scale is named "The Dominant." (See letter-name G, par. 8.)

**30.** About midway between our C tonic and G dominant, we come upon a sound which may be said to stand third in rank and musical influence, which, from its central position between the two just named, is termed "Mediant." In the key of C, which we are now considering, E first line of treble will give us the sound in question. Collectively, these three sounds form what is called the "Tonic Chord," which, when heard in connection with other chords, and, more particularly, when the tonic (C) is reinforced by being sounded in octave, is generally considered to be suggestive of strength, boldness, steadiness, endurance, &c.

TONIC CHORD OF C



From this it will be understood that our C tonic is not only ruler in its own particular key or scale, but is the first of three sounds which please the ear well when heard in consecution, and sound most beautifully when heard together. Such a combination, having, as shown, an originator or root, a *third*, and a *fifth*, is called a triad, or chord.

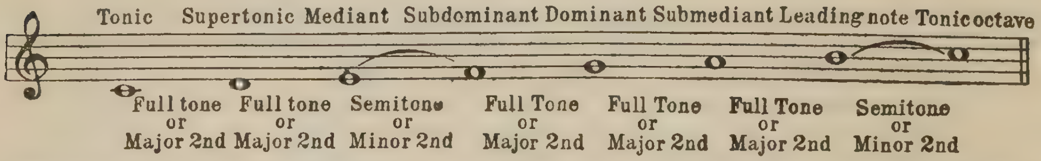
**31.** In the same manner the dominant (G) may be made the lowest note (root) of a three-tone series, or chord, when D, which stands in the same relation to G that G itself does to C, will be our over-fifth or under-fourth. D, as will be seen (par. 8), is the note immediately over or above C, our present tonic. The note immediately above *any* tonic is, from this circumstance, called " Supertonic."

**32.** A tone, to take that place in the dominant chord which the mediant occupies in the tonic chord, will now be required. The sound bearing the letter-name B supplies, in present circumstances, the missing link, which, because it may be said to live *very near* to C, our tonic, and because, moreover, it leads the mind to expect that important sound, is named " The Leading Note." The three sounds just described, viz., dominant (root), leading note (third), and supertonic (fifth), when sounded simultaneously, form " the dominant triad," the second great chord in music—a chord, however, which, when *properly introduced*, suggests unrest, motion, desire, rather than those qualities which are felt to belong to the tonic chord.

**33.** Two tones of this scale of key C are still unaccounted for; the first of which, F, from the facts (1) that it stands immediately below the dominant, and (2) because contrariwise to the dominant (par. 29) it is a fourth *above* or a fifth *below* the tonic (C), is called " Subdominant."

**34.** Taking this F as the root of another chord, we find a third for it in A, which, because it bears the same relation to the subdominant that the mediant does to the tonic, or because it is a third below the tonic, just as the mediant is a third above it, is named the " Submediant." The octave note of our tonic (C) is fifth in this subdominant chord, which, properly preceded and followed, leaves on the mind of the hearer a rather sad, serious, or solemn impression.

**35.** The chords just explained embrace all the tones of the diatonic scale, regarding which it yet remains for us to remind the student that the notes of which it is composed do not all stand at the same distance one from another (see par. 15). Although not mathematically correct, it will be found sufficient for all practical purposes to say that between the several couples C, D; D, E; F, G; G, A; and A, B the interval is described as a full tone, or major (larger) second: while between E, F, and B, C, the interval is only a semitone, or minor (lesser) second. The names explained above, and the intervals between the consecutive tones of the scale in the key of C, are here shown:—

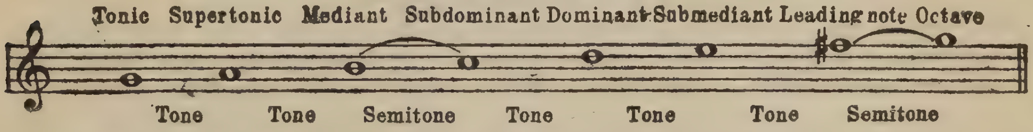


The above illustration shows what is known as the major scale; and the student would do well to know it familiarly, observing carefully the order of the intervals, viz., tone, tone, *semitone*, tone, tone, tone, *semitone*; and also that each of its sounds, when heard in its proper place, conveys to the mind an impression *in keeping with its name*, and quite distinct from all or any of the others.

**36.** The scale in the key of C, just explained, may be obtained or heard in many octaves from the white keys of a pianoforte. The resources of the musician would, however, be greatly narrowed if this scale could only be employed at *one pitch*; and we have now to explain how, as was stated in par. 28, it may be started high or taken low, as required—comparative height or depth being the *only difference* between one major key and another. There is *only one major scale*.

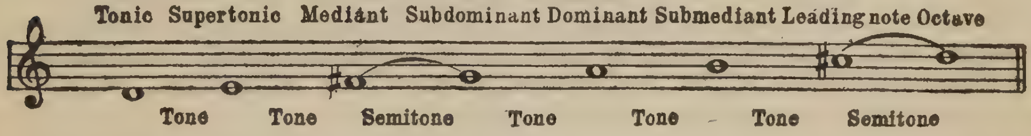
**37.** In proceeding from " key " to " key " (see " Definitions," page 3), the dominant of the *key to be left* or quitted is, as might be expected from its importance in the scale, the tone most frequently chosen as the new key-note or tonic. The dominant of C is G; let us consider G as a tonic, and try to find out whether the scale succession given above comes out correctly. G to A a tone, A to B a tone, B to C a semitone, C to D a tone, D to E a tone; but E to F is only a semitone, whereas, at this particular place (submediant to leading note) we require a full tone. In addition to this, between F and G a full tone is found where a half-tone is required. The necessary arrangement is obtained by raising F a semitone by means of a sharp (♯, par. 16), when we proceed E to F♯ a tone, and F♯ to G a semitone. In notation thus:—

MAJOR SCALE IN KEY OF G



**38.** After the same manner, let us take the dominant of G, which is D, to be found a fifth above or fourth below the present G key-note, and proceed to work out the scale as before. D to E a tone, E to F a semitone; but F *having been sharpened for the scale of G*, we retain that sharp, therefore we say, E to F♯ a tone, F♯ to G a semitone; G to A a tone, A to B a tone, but B to C is only a semitone. This semitone, coming, as in the former instance, where a whole tone is wanted, *viz.*, between submediant and leading note, we are compelled to employ yet another sharp, and to say, B to C♯ a tone, and C♯ to D a semitone. In notation:—

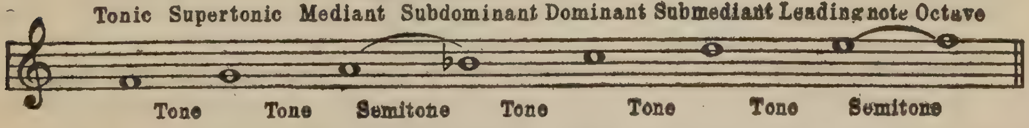
MAJOR SCALE IN KEY OF D



**39.** Going further in this direction, we might work out the scale on the dominant of D, which is A, and again on the dominant of A, which is E, &c., but no exercise more improving could possibly be desired by the earnest student. We therefore advise all such to think and write out for themselves the scale of A three sharps, E four, B five, F♯ six, and C♯ seven sharps.

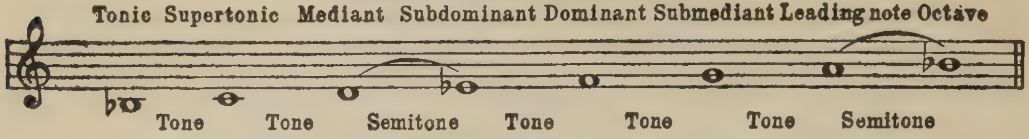
**40.** Next to the dominant, the subdominant is the tone most frequently taken as a new tonic or key-note. Going back to key C, let us take F, its subdominant, for that important place, and, as formerly, proceed to work out our series of scale intervals. From F to G a tone, G to A a tone, but from A to B is also a tone, whereas between the third and fourth of the scale a semitone is the interval required. Moreover, between the succeeding pair of notes (B and C) there is only a semitone at a place, namely, between the fourth and fifth degrees of the scale, where a whole tone or major second is demanded. The problem is solved in both instances by simply lowering (*i.e.*, flattening, par. 16) the B, when, continuing our scale ascent, we say A to B♭ a semitone, B♭ to C a tone, C to D a tone, D to E a tone, and E to F a semitone.

MAJOR SCALE IN KEY OF F



**41.** It will be seen that the note just inflected by a flat is subdominant to F, and must, in consequence, according to our present course of procedure, be taken as our next tonic. Thinking out the scale in this new key, we shall find that just as B, the fourth from F, had to be flattened to bring the semitone into proper place, so, and for similar reasons, E has to be lowered a semitone in the key of B♭.

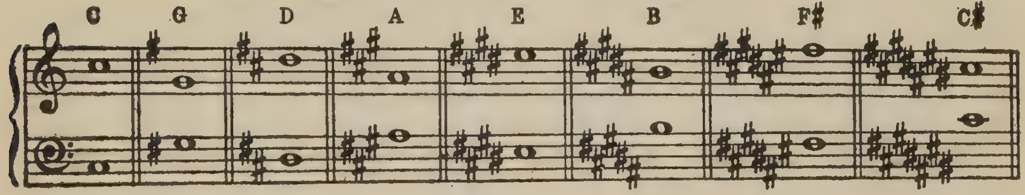
MAJOR SCALE IN KEY OF B♭



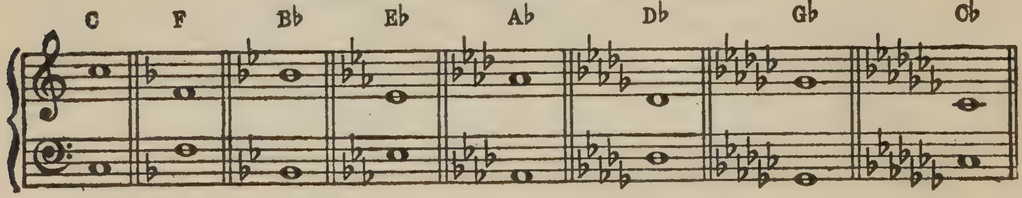
**42.** As in the case of keys with sharps, the student is recommended personally to work out the scale in the additional keys for which flats are required. Progressing by subdominants, it will be found that the note *last flattened* will always be the new tonic; thus, as shown above, B♭, subdominant in F, is tonic in B♭; E♭, subdominant in B♭, is tonic in E♭. After B♭ the series of keys with flats are E♭ three flats, A♭ four, D♭ five, G♭ six, and C♭ seven flats; that is to say, every note in the scale of C♭ is flattened. Practically the scale of C♭ is at the same pitch as that of B, having five sharps, and the one key is not unfrequently substituted for the other. Such a substitution is called an "enharmonic change" (see "Definitions," page 3). The keys C♯ and D♭ are related to each other in the same way; thus the keys with sharps, and those with flats, as it were, meet, and the necessity for further multiplication of these signs is avoided.

**43.** It will be readily understood that if in keys with many sharps or many flats, these inflecting agents were dotted all over the page, they would become not only troublesome to the writer, but perplexing to the executant. To avoid these evils, musicians have adopted the plan of gathering the necessary signs into a group, and *in their order*, and as springing from key C, and of placing them at the beginning of a piece or harmonic part immediately after or behind the clef. This is called the key-signature. The key of C, as we now know, requires neither sharps nor flats; the keys of G and F have one sharp and one flat respectively: to all the other keys the word "group" applies. The following are the various key-signatures, with a note showing the position of tonic in bass and treble clefs:—

FIRST- KEYS (FROM C) WITH SHARPS



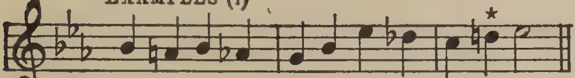
SECOND- KEYS (FROM C) WITH FLATS



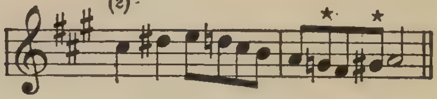
It should be observed that the order or progression of keys with sharps is by fifths *upwards* or fourths downwards, while that by flats is exactly the reverse, *viz.*, by fifths *downwards* or fourths upwards. It may also be noticed that in key-signatures with sharps, the *last sharp, i.e.*, that nearest to the observer's right hand, is always on the *leading note*; in those with flats, the *last flat* is always on the *subdominant*: these may be called the deciding tones as to the particular key of the scale or piece. (See "Interval," page 20.)

**44.** Let it be clearly understood, and always remembered, that a sharp or flat placed in the key-signature affects *all* the notes of that name which occur in the course of the piece, unless contradicted by a sign called a natural (par. 16). The natural (♮) may be said to stand between the sharp and flat, lowering for the time the sharpened note by a semitone, and raising for a like period and by the same interval that which has been flattened. A sharp, flat, or natural, occurring thus in the course of a composition is said to be "an accidental," although it would be hard to tell how the name originated. Coming at the beginning, or in the course of a bar or measure (see pars. 72 and 73), it affects all the notes within it that are of the *same name*, and, as some theorists say, influences even the first note of the measure following, if that should happen to be the note that has been inflected. In the latter case, however, it is better to re-write the accidental, or, it may be, to restore to its normal place a note raised or lowered. This precaution may extend to even the *second* note.

EXAMPLES (1)

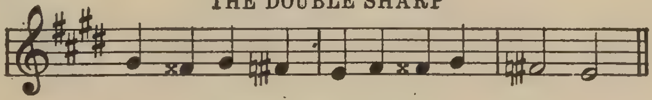


(2)

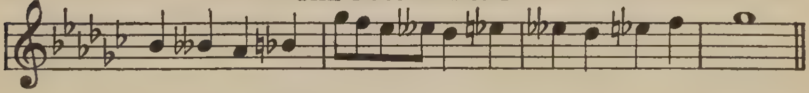


**45.** Sometimes a note that has been already sharpened, or a note that has been flattened, requires to be raised or lowered yet *another* semitone. In the former of these cases a character called a double sharp (written X) is employed; in the latter the flat sign is simply doubled (♭♭), named a double flat, and placed in the proper position. The necessity for these, the manner in which they are used, and how the note thus doubly inflected is brought back to its normal pitch, are here shown:—

THE DOUBLE SHARP

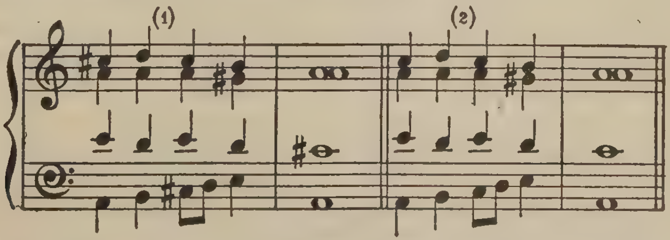


THE DOUBLE FLAT



## THE MINOR SCALE.

**46.** Perhaps in no department of musical research are musicians less agreed than in the origin, development, and proper treatment in educational works of the minor scale, or, as some prefer to consider it, the *minor mode of using* the scale. Judging from the practice of great composers, they seem to have come to the conclusion that any tonic can be employed either as the tonic of a major or a minor key, as best suits the purpose in hand; the same dominant chord, and more particularly what is called the same *chord of the dominant seventh*, being resolved indifferently either on the one or the other. Let the student endeavour to hear and appreciate the different effect in the following examples:—



A is tonic in both cases; but in (1) we have what is called a major third between that tonic and its mediant, the third above; in (2) there is only a minor third. This is the only difference in notation, and yet in musical effect the brightness of the first is in great contrast to the sadness of the second example. The same tonic can undoubtedly be made the chief tone either in a major or a minor scale; but to a beginner the study of the minor from this point of view presents great difficulties, and in a course of solfeggio and sight-singing (which is to follow) cannot be made so serviceable as the possibly less scientific but more practical course which, following the example of the old sol-faists, Mainzer, Curwen, and others, we here adopt.

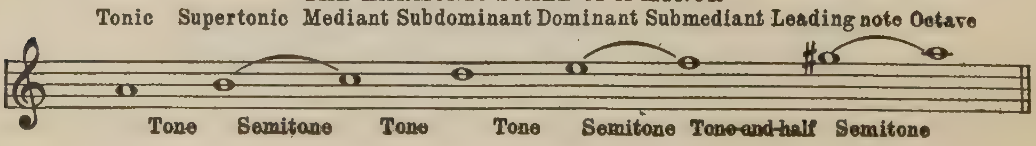
**47.** Any tone of the scale may, by means of accent, chord progression, and cadence or close, be made so prominent in a tune as to be in some measure regarded as the principal tone or tonic. This was the practice—partly adopted, it is supposed, from the Greeks, and partly invented—of the early Church composers. Their system has been handed down to us under the name of the "Ancient Ecclesiastical Modes," to be found exemplified in many of our best and most familiar national melodies. The major scale (see page 12) is equivalent to what was by them termed the "Ionian"; and the minor, now under discussion, is partly at least an adaptation of the "Æolian" mode of these old writers.

**48.** The ancient Æolian mode took, as we may say, the sixth of our major scale (the submediant) as its tonic; consequently what we have hitherto spoken of as the mediant—being a fifth above or fourth below the submediant—became dominant; the name, position, and importance of the other tones being similarly altered. Taking the submediant as tonic, the changes which the other scale tones undergo may be tabulated thus:—

Submediant becomes Tonic. Supertonic becomes Subdominant.
Leading note „ Supertonic. Mediant „ Dominant.
Tonic „ Mediant Subdominant „ Submediant.
Dominant becomes Leading note.

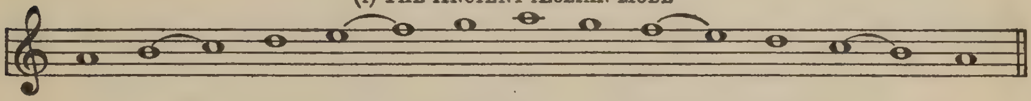
**49.** It will be observed that in this scale the semitones occur between the second and third and fifth and sixth, instead of between the third and fourth and seventh and eighth degrees in the major. It was, however, at the interval (a full tone) between the new tonic and its leading note that modern ideas, more particularly in connection with harmony, and ancient practice, first came into collision. When a chord (par. 30) has *two full tones* between its root and third, and only a tone and a half between its third and fifth, it is said to be a *major chord*; but when this order or arrangement of thirds is inverted, the chord is *minor*. If we take our new dominant, and, proceeding as formerly, place a third and fifth, drawn from the ordinary scale, above it, we shall find that a minor chord is the result; the precise notes in key C being E, G, B. This is in direct opposition to one of the first principles of modern harmony, which is that the dominant of the key *must bear a major chord*. How, therefore, to reconcile this with having at the same time full command of the solemn, sombre, yet pleasingly plaintive effect of the old mode, became a problem to be solved. The solution *looks* very simple. The third of this new dominant was simply *raised a semitone*, so making the chord major (E, G♯, B), and it was felt that this newly raised tone (G♯) had *all* the *leading* effect, or, if we may so speak, the *teaching-the-mind-and-ear-to-expect* effect of its namesake in the major scale. With the seventh of the scale so raised, and in the minor key related to C (hence called the relative minor of C), with key-relation names and position of semitones, we here give what is known as—

THE HARMONIC SCALE OF A MINOR

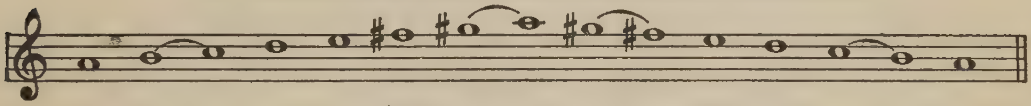


**50.** It will be seen that in the harmonic minor scale we have a very wide interval, *viz.*, an augmented second (see "Interval" page 20) between the sixth and seventh degrees, an interval troublesome to the singer, and in general not so satisfactory to the listener as that of a major second, found between submediant and leading note in the major scale. In other words, while harmony demands a major chord for dominant, melody at least *suggests* that the intervals between successive tones of the scale shall consist entirely of major and minor seconds. To meet this new requirement or suggestion, musicians were fain, in *ascending passages particularly*, to raise the *sixth* degree of the minor scale, as well as and in addition to the seventh, thereby assimilating the *last four* notes of this scale to those similarly placed in the major (see below). Moreover, when *melody only* had to be taken into consideration, it was found that in *descending* passages the old Æolian mode quite satisfied modern desires, and was often both more pleasing in affect and less difficult in performance. So it came to pass that musicians agreed, somewhat arbitrarily, to form a scale with a raised (major) sixth and seventh ascending, and to make the descent with the *seventh* and *sixth* restored to their original position. The minor scale may therefore be said, as occasion requires, to take unto itself, ascending and descending, the following forms, *viz.* :—

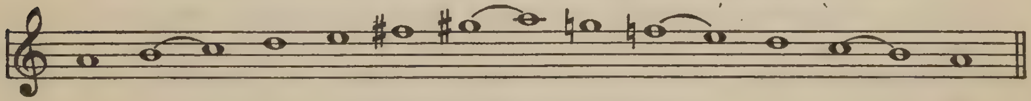
(1) The Ancient Æolian Mode



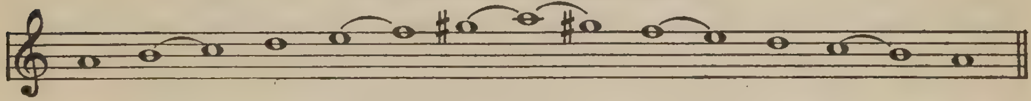
(2) The Arbitrary Minor Scale, ascending and descending



(3) A Combination of *One* and *Two*, sometimes called the "Melodic Form"



(4) The Harmonic Minor Scale

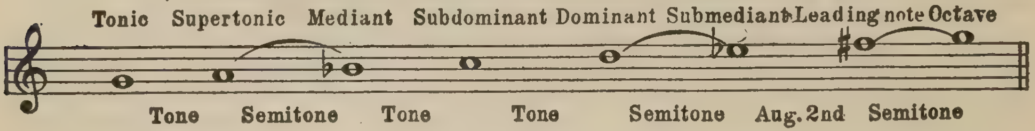


Of these four, the last is by far the most important, for its notes are employed in harmony, hence its name. The major sixth *ascending* and the minor seventh *descending* can seldom be employed for harmonic purposes.

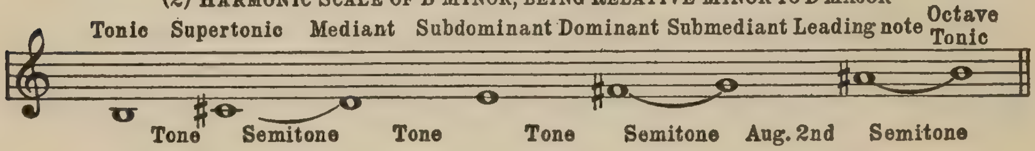
**51.** Our scale illustrations in this chapter have all hitherto been given in the key of A minor, which, as already stated, is called the relative minor of C major. The converse, as might naturally be expected, also holds good, *i.e.*, C is relative major to A minor, the key-signature for *both* keys being the same. This key-signature is quite sufficient for the unaltered or Æolian minor scale; but the raised (sharpened) seventh or sixth, or, if within the rules (par. 44), the restoring of these altered notes, has in each case to be shown by an accidental. This would seem to imply that, as stated above, the alteration of these notes took place only when harmony or melody seemed to make the demand.

**52.** In the manner just described, *every* major key has its relative minor, and *vice versâ*, one key-signature sufficing for both; the pairs G major and E minor, D major and B minor, A major and F♯ minor, E major and C♯ minor, B major and G♯ minor, F♯ major and D♯ minor being thus related. So, in the keys with flats, F major and D minor, B♭ major and G minor, E♭ major and C minor, A♭ major and F minor, D♭ major and B♭ minor, G♭ major and E♭ minor, are relatives, the minor tonic being always found a minor third below the major tonic, and *vice versâ*. As in the major keys, we here work out specimens of the minor scale (1) in a key requiring flats, and (2) in one requiring sharps; and also, as formerly, recommend the student to continue the series. The harmonic form, being most important, is here adopted; but by means of an additional accidental, or by taking away that here employed, the student can make the examples illustrations of any form given above.

(1) HARMONIC SCALE OF G MINOR, BEING RELATIVE MINOR TO B♭ MAJOR



(2) HARMONIC SCALE OF B MINOR, BEING RELATIVE MINOR TO D MAJOR

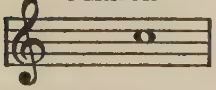


**53.** We might now proceed to give all the minor key-signatures, as before we gave those pertaining to the major keys; but this would occupy a good deal of space, and would deprive the student of an excellent opportunity for self-improvement. If a difficulty as to any signature arises, it can be solved by simply turning back to the major keys and writing the minor tonic a minor third below the given major.

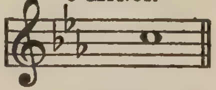
**54.** What is called the *tonic minor* or *tonic major* means that either of these is at *one and the same* pitch. Thus A, relative minor to C, is tonic minor to A major, *i.e.*, is at the same pitch as the last-named major key. So E is relative minor to G major, but tonic minor to E major. D is relative minor to F, but tonic minor to D major. The *same key* minor, it may be observed, has (where there exist so many) *three sharps less* or *three flats more* than that key major. Where there are fewer than three sharps, as in the case of G major (one sharp), G minor loses that sharp, and gains, if we may so say, *two flats*; or in the case of D, loses two sharps, and gains one flat. This, as will easily be understood, is equivalent to the rule first given.

The following gives in the treble clef the minor key-signatures as compared with their *tonic* major. The student would do well to work out the same in the bass and other clefs, giving, as here, a note to show position of tonic.

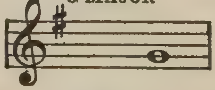
C MAJOR



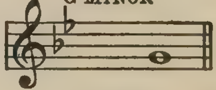
C MINOR



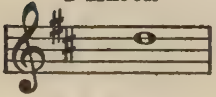
G MAJOR



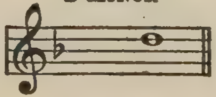
G MINOR



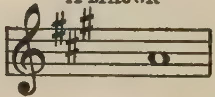
D MAJOR



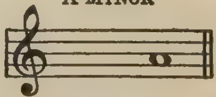
D MINOR



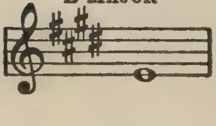
A MAJOR



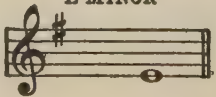
A MINOR



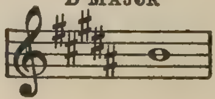
E MAJOR



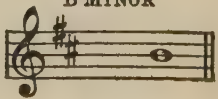
E MINOR

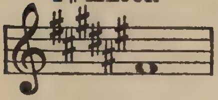


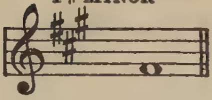
B MAJOR

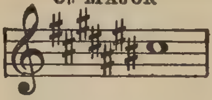


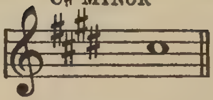
B MINOR

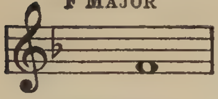


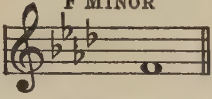

F♯ Major

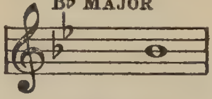

F♯ Minor

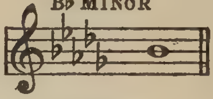

C♯ Major

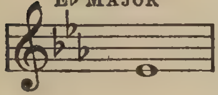

C♯ Minor

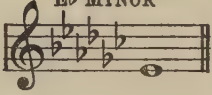

F Major

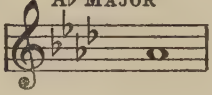

F Minor

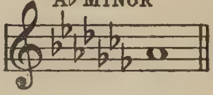

B♭ Major


B♭ Minor


E♭ Major


E♭ Minor

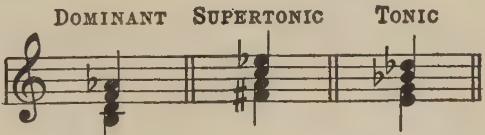

A♭ Major


A♭ Minor

**55.** It was shown in par. 46 that the same dominant chord or dominant seventh chord stood in these relations to either of these keys; hence, as already hinted, and also for mathematical reasons, many musicians hold that tonic major and minor are more nearly related to each other than what, as explained, are called by the name relative major or minor. Some confusion is at first apt to arise as to the certainty of whether a key is major or minor. The distinguishing features of the minor key are—(1) from tonic to mediant, or from root to third of tonic chord, generally the chord to be heard first, is *always* a *minor third*; (2) the leading note of the minor key is always shown by an accidental, unless what is called a modulation is being made in the course of a piece, and this accidental is not required; (3) from this leading note to the mediant just mentioned the distance or interval is *invariably* a *diminished fourth* (see par. 66), which interval decides the key.

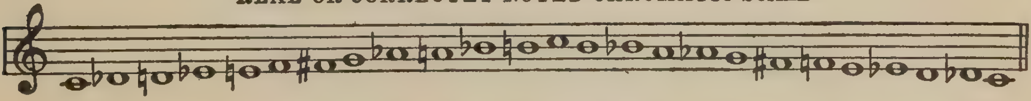
## THE CHROMATIC SCALE.

**56.** What was called the melodic chromatic scale was shown and explained in par. 17. It must now be stated that, although for convenience in writing, and perhaps for facility in performing, the form there given is very frequently employed, it is by no means the most scientific or best suited for harmonic purposes. Only advanced students will be able to comprehend the fact that the true notation of the chromatic scale is taken or obtained from what are called the three fundamental discords of the minor ninth in their first inversion, *viz.*, dominant, supertonic, and tonic. The tonic is put last, because, in this connection, it is less frequently used than the others. In C major these chords, or rather discords, are—

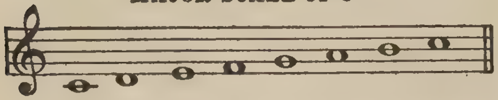


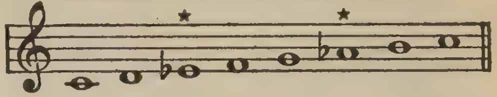
**57.** The following scale gives all the notes employed in the construction of these, and although, for the reasons given, a sharp is often allowed to do duty for a flat (as G♯ for A♭, and *vice versâ*) the laws for writing it are, or ought to be, as stringent as for either the major or the minor scale forms.

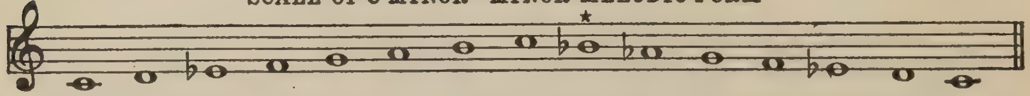
REAL OR CORRECTLY NOTED CHROMATIC SCALE



**58.** It should also be noticed that this harmonic chromatic scale, as it may be termed, includes the major and all the forms of the minor scale (see page 15), with the addition of a minor second and an augmented fourth from the key-note (see below). The notes added by each successive scale in the following are distinguished by an asterisk.


**MAJOR SCALE OF C**


**HARMONIC MINOR SCALE OF C**

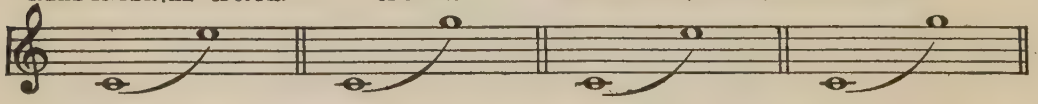

**SCALE OF C MINOR—MINOR MELODIC FORM**

The three notes marked with the seven of the major scale, and the two mentioned specially above, make up the number or succession to twelve semitones which go to form the chromatic scale. A most improving exercise for the student would be to re-write the complete chromatic scale as here given, *in all the keys*, which are in this case reduced to twelve in number, major and minor being alike.

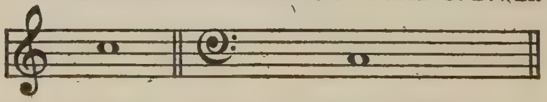
## INTERVAL.

**59.** A knowledge, theoretical and practical, of interval may be said to be one of the most important factors of the musician's power, and a necessity to professional success. The study of this subject ought therefore to be so thorough that, whether an interval be presented to the eye on the written or printed page, or be made audible by voice or instrument, its name and nature should at once be recognised. It would be well for the student to seek opportunities for becoming familiar with the *sound* of every interval, as well as with its name. Mere book-learning in any department of music, although often dignified with the name of " theory," is of no great value, unless accompanied or immediately followed by practical illustrations. It cannot be too frequently inculcated on the mind of the earnest student, that music is something to be *heard*, and to be known *when heard*, before it can be known in reality.

**60.** As already explained (par. 15), the word interval here means the musical distance from a lower sound to a higher, or the *difference in pitch between any two sounds*. Intervals are usually spoken of as being *within* the octave, so that, unless otherwise distinctly stated, the following would not be counted from middle C, as here shown (and then named a tenth and a twelfth) but would be counted from C in the fourth space, and named and looked upon as a third and fifth :—


REAL INTERVAL—A 10TH. A 12TH. USUAL NAME—A 3RD. A 5TH.

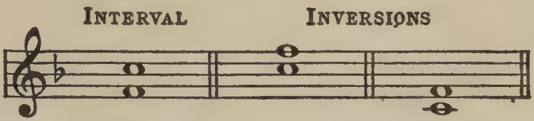
In this connection it should be mentioned that when the interval exceeds an octave and has to be *really* or *fully* named, as in the case of two octaves, the first *octave note*, up or down, is considered the highest (or lowest) note of one series, and the lowest, or, as the case may be, the highest note of the next. Thus if we were to transpose C fourth space, treble clef, two octaves lower, middle C would be the *lowest note* of *the first octave* and the *highest note* of *the second*, thus :—


C—4TH SPACE TRANSPOSITION—2 OCTAVES LOWER

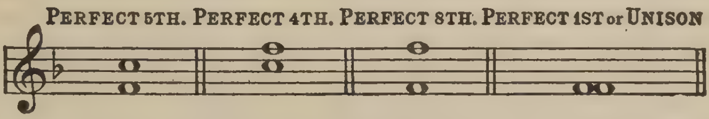
If the transposition, or change of place, were to be two octaves higher, the latter part of the last sentence would just be reversed.

In other words, although one octave, as its name implies, gives the number eight, first and last note inclusive, two octaves, counted straight up or down, give only *fifteen*.

**61.** The inversion of an interval means that the lower note has been raised an octave, or that the higher has been lowered to that extent.

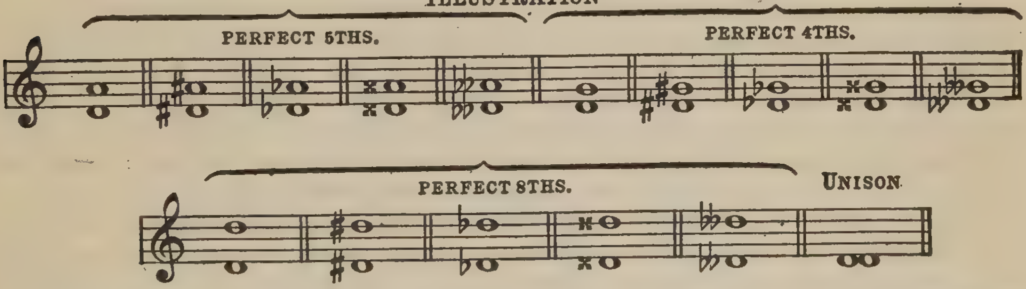


**62.** Intervals are of five kinds, *viz.*, (1) Perfect, (2) Major, (3) Minor, (4) Augmented, and (5) Diminished. Perfect intervals are so called because (1) the vibrations of the two sounds of which they consist coincide, or come together, more frequently than is the case with the others, and (2) because, unlike (as we shall find) major and minor intervals, they cannot be made more or less without *at once* becoming augmented or diminished. Sweetly concordant in themselves, they are bounded on either side by very unpleasant discords. The perfect intervals are (1) the fifth, (2) its inversion the fourth, (3) the octave, and (4) its inversion the first, or unison. Strictly speaking, the unison is not an interval, but it is a *combination*, and although it cannot be made *less*, may unintentionally and easily be made *more*, and so become discordant.



**63.** With one exception, the notes which make perfect intervals when written or printed have always the same appearance, *i.e.*, they are both *without* sharp or flat, or they both *have* a sharp, a flat, or it may be a double sharp or a double flat.

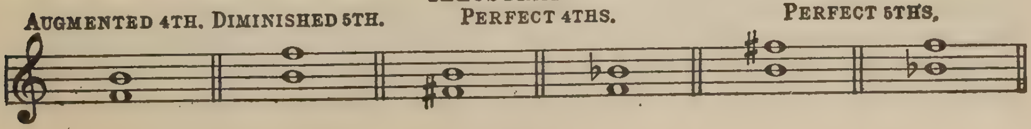
ILLUSTRATION



The exception mentioned occurs in the interval, or inversion of the interval, between F and B. Returning to the scale of C major (par. 35), we find that from the lower to the higher of these notes there is a succession of *three full tones* (or major seconds). Collectively these three tones make what is variously termed a pluperfect, tritone (three-tone), or augmented fourth—we prefer to use the name last given—which is one semitone more, or, when inverted, a diminished fifth, which is one semitone less than perfect. Wherever B and F occur, therefore, if a perfect fourth or fifth is required, we must either sharpen F or flatten B.

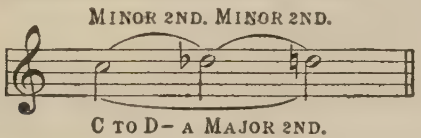
The student should scarcely require to be reminded that between the subdominant and

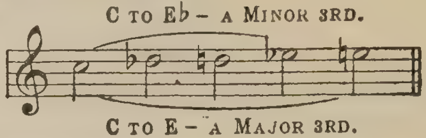
ILLUSTRATION



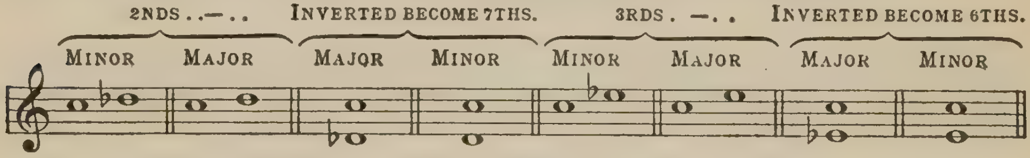
leading note of every major scale this augmented fourth, or, when inverted, diminished (sometimes called imperfect) fifth occurs.

**64.** Major and minor intervals are so closely connected that we speak of them together. Major intervals are one semitone wider than minor intervals of the same name. Thus in a major second two semitones may be counted, while a minor second has only one. In a minor third there are three semitones, while in a major third there are four.



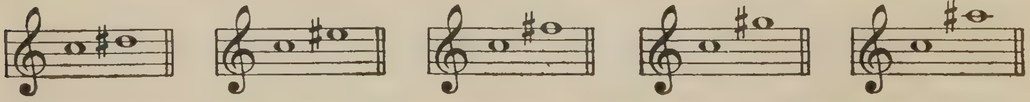


As stated in par. 62, fourths and fifths are perfect intervals, and are therefore *never* preceded by the terms " major " or " minor " ; the former is made up of or contains a major third (two major seconds) and a minor second ; the latter, as was seen when the constitution of a chord was under consideration (pars. 30 and 50), consists of two thirds, a major and a minor, or *vice versâ.* Sixths and sevenths are simply the inversion of thirds and seconds, and the number of semitones to be found respectively in each or either can always and without hesitation be known by subtracting the number contained in the *lesser* interval from the complete chromatic scale, which contains twelve. Thus in a major third there are four semitones, consequently in its inversion, a minor sixth, there *must* be eight. Two semitones are found in a major second, therefore ten make up the number of which its inversion, a minor seventh, consists. So with minor seconds and thirds, which in inversion become major sevenths and sixths.



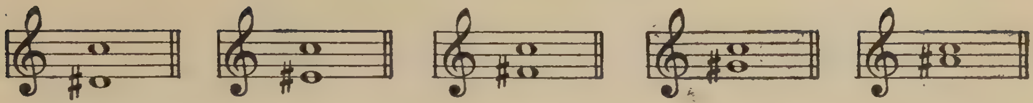
A moment's thought will bring home to the understanding the fact that just as sevenths are the inversion of seconds, and sixths of thirds, so thirds are the inversion of sixths, and seconds of sevenths. As we now know, fourths are the inversion of fifths, and *vice versâ*, so that the list of ordinary scale intervals is now complete. Note that the number of any interval and the number of its inversion when added together always make *nine*, as seconds and sevenths, thirds and sixths, fourths and fifths, and the inversions of these. Let it also be carefully noted that a *major* interval inverted becomes a *minor*, and that a *minor* becomes a *major*.

**65.** In an augmented interval there may always be found one semitone more than in a major or a perfect, and, as a corollary, two semitones more than in a minor interval of the same name.



Thus an augmented second contains three semitones ; an augmented third (seldom employed), five semitones ; an augmented fourth consists of three consecutive major seconds, or six semitones ; an augmented fifth is made up of two major thirds (as C to E, and E to G♯), or eight semitones ; and an augmented sixth may be said to consist of a major third and an augmented fourth put together, and contains ten semitones. An augmented seventh, being practically equivalent to the octave, is seldom or never written.

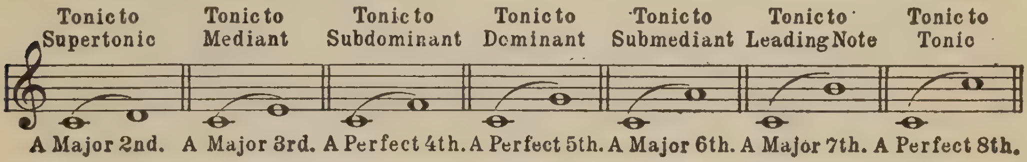
**66.** Diminished will perhaps be best understood if considered as the inversion and *reversion* of augmented intervals. Thus an augmented second inverted becomes a diminished seventh, and contains only nine semitones, being one *less* than a minor seventh ; an augmented third becomes a diminished sixth, containing only seven semitones, or one less than its minor namesake ; and an



augmented fourth becomes a diminished fifth, which is made up of *two* minor thirds, and is one semitone less than perfect. With similar results as to semitones, an augmented fifth becomes when inverted a diminished fourth, and an augmented sixth when thus treated becomes a diminished third.

Although it is almost a necessity for every musical student to be able to tell the number of semitones contained in any given interval, yet it should never be forgotten that the number of these does not always decide what the interval is. Thus an augmented second contains three semitones, but so does a minor third. A diminished third is made up of two minor seconds, but so, as we have found, is a major second. Even so with an augmented third and a perfect fourth, and so with a perfect fifth and a diminished sixth, and so upwards in the interval numbers; but no interval can, or at least *should* ever be written instead of another. Melody and harmony alike demand that a second, of *whatever kind*, should be written as a second, a third as a third, and so with all the other intervals.

**67.** In recognising and sounding intervals, nothing is so helpful to the student as thorough familiarity with the scale, particularly in its major form and in all the major keys. Analysis proves that from any major tonic to any of its relative or scale-tones the interval is either *major* or *perfect*. For example, in C major:—



With a sharp placed before each note in the foregoing example, the same relations would be maintained, and the key would be C♯ major; with a flat before each the theory would be found correct in the major key of C♭. The student would do well to work this exercise out in all the major keys.

**68.** From the above we deduct the following:—

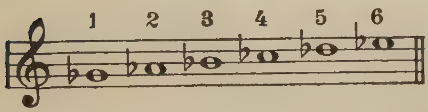
Rules for finding and naming intervals—

(1.) Remembering that every line and every space counts a degree, find the *number* of the interval by counting from the lower to the higher note.

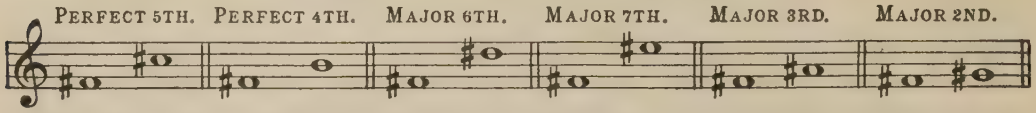
(2.) Consider the lower of the two notes a tonic or key-tone, and mentally ask the question, "Does the upper note occur as supertonic, mediant, &c., in the scale of this supposed major tonic?" If it does, then the rule in par. 67 applies—the interval is either major or perfect. If it does not, then—

(3.) In a similar way ask this second question, "Does the inflection, or want of inflection, or, it may be, the double inflection, make the interval *wider* or *narrower?*" If narrower, then, it must be so much *less* than major, or perfect; if wider, it must be so much *more*.

Working out these rules, let us find the interval from G♭ to E♭. From Rule 1 we find that G♭ to E♭ is a sixth, and answering the question of Rule 2, it must be a major sixth, for E♭ belongs, as submediant, to the scale of which G♭ is tonic. By taking away the flat from E the interval would be *widened*, and so from G♭ to E♮ must be an augmented sixth, which can easily be proved by its inversion, E♮ to G♭, being found a *diminished third*. On the other hand, if, replacing the flat on E, we took away the flat from G, the interval would be *contracted* (*i.e.*, G is a semitone *higher*, and consequently nearer to E than G♭ was) and the

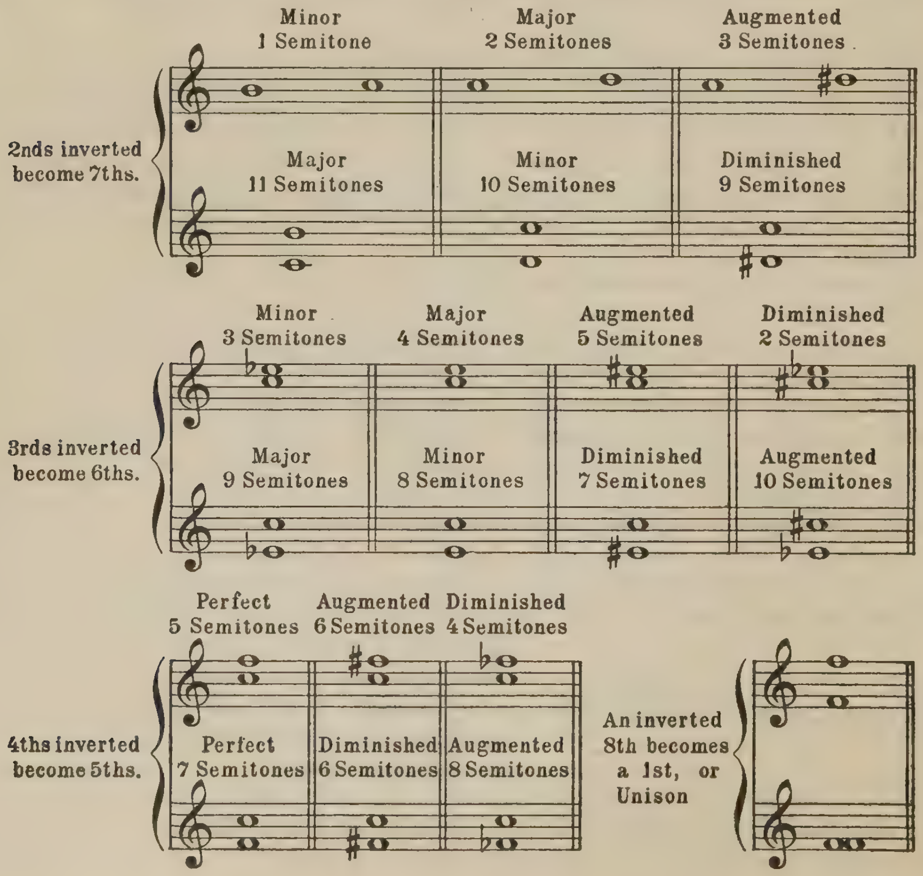


interval from G♮ to E♭ could be proved a *minor* sixth by its inversion, E♭ to G♮, being found a *major* third. Again, taking F♯ as a tonic, let us apply the rules.



From F♯ to C♯ is a fifth, and it must be a perfect fifth, for (1) C♯ occurs in this scale, and (2) both the notes are *sharpened* (par. 63). From F♯ to B is a fourth, a perfect fourth, for (1) B occurs in the scale of F♯, and (2) we know that with any perfect interval between an F and a B there must either be a sharp on the one or a flat on the other (par. 63). From F♯ to D♯ is a sixth, a major sixth, for D♯ is submediant when F♯ is tonic. From F♯ to E♯ is a seventh, a major seventh, for E♯ is leading note when F♯ is tonic. From F♯ to A♯ is a major third, for A♯ is mediant to F♯ tonic. In the same way G♯ is supertonic to F♯, and the interval between the two notes must therefore be a major second. Working in this manner, the student may, it is hoped, easily and with much personal benefit, make the above or any similar series of intervals minor, augmented, or diminished, and so get thoroughly familiar with their *appearance*, while a strenuous endeavour is made to hear the *sound* of each. Sometimes augmented and diminished intervals are spoken of as chromatic; but all, or nearly all, are to be found either in the major or in one or other of the minor scale forms, and in *this sense* are *diatonic*, that is, they are to be found in the scale.

**69.** Table of intervals and their inversions, giving the number of semitones in each :—



The student will now understand that by taking the *lower* staves of the above *first*, the inversion of the intervals found therein will be seen in the *higher* staves, so that we have here a *complete list* or table of intervals, which could be transposed into all the keys.

## ACCENT AND RHYTHM.

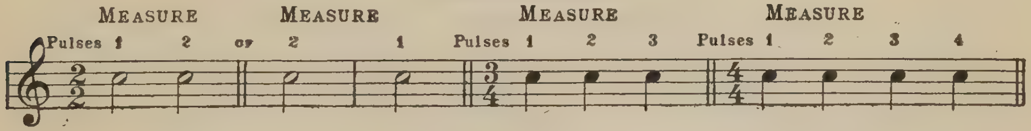
**70.** Accent and rhythm, generally known as "time" in music, are the channels through which the orator gives life and meaning to his sentences, and thus stirs the hearts of his audience; the means by which the poet divides his lines into what are called "feet," or constructs these again into verses; and they form the medium through which the musician is enabled to bring into prominence what have been happily termed "the feature notes" of his melody. Accent in music has relation to the greater force or stress with which certain tones are to be struck, *i.e.*, sounded with voice or instrument, and the comparative weakness with which others are to be performed. Rhythm has relation more particularly to the division of music into equal portions, sometimes called *sections*, with the more minute divisions and subdivisions of duration therein contained. It occupies much the same position in regard to music as metre does in connection with poetry. In ordinary speech, accent and rhythm come, or may come, at irregular intervals; but in music and in poetry there must be regularity in the order of accent, and at least a certain degree of uniformity in the rhythm.

**71.** The simplest form, or order, of accent in music is the twofold, or alternate—in prosody called long and short (Trochaic), or short and long (Iambic)—which perhaps will be more easily understood by the musical student as *strong* and *weak*, or *weak* and *strong*. Let an upright line placed before a syllable indicate that on that word or part of a word the strong accent is to fall, and the former of these may be illustrated by the line—

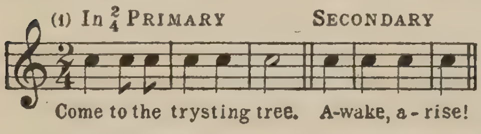
| Si - lent- | ly the | shades of | eve - ning ‖ And the latter by:—They | grew in
| beau-ty | side by | side ‖

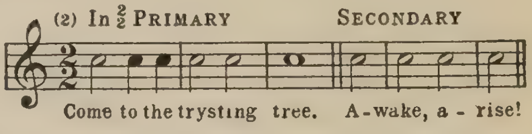
**72.** The time from one accent to the next, as from a strong to a weak, or *vice versâ*, is variously termed a "count," a "beat," and a "pulse" (from the word pulsation); and the number of pulses from one strong pulse to the next form collectively what is frequently spoken of as a "bar," though sometimes called a "measure." We shall in each case adopt the name last given, viz., "pulse" and "measure."

ILLUSTRATION



**73.** Either of the lines of poetry above would be said to be in *Simple Duple* Time; *i.e.*, there are two pulses in the measure—the former, beginning on the strong accent, being sometimes distinguished as the "primary," and the latter, beginning with the weak accent, as the "secondary" form. The terms "primary" and "secondary" apply, as here explained, to *all* measures. An upright line drawn through the staff always shows, as above, where the strong accent is to fall. It is sometimes called a "bar line." In cases where the strong accent comes *first*, no such line is given; but it is *understood* from the measures which follow. A double bar, two thick lines (‖), shows the finish of a strain or a piece. There are no signs for the words or notes which bear the weak accent, *i.e.*, which are unaccented; but it has just been pointed out that accents in music must come *regularly*; we therefore *know* that the weak accent must follow the strong, and *vice versâ*, according to the commencement made. To make this fact the more plain there is generally and immediately after clef and key signs placed what is called the "time signature." This sometimes consists of a C, but it usually is made up of two figures or numerals, given somewhat in the form of a fraction in arithmetic, when the *upper* figure always tells the *number* of *accents* or *pulses* in the measure, and the *under* figure shows the relation as half, fourth part, eighth, &c., that each pulse bears to the semibreve (see par. 20). Thus with the numerals $\frac{2}{4}$ so placed we should be told (1) by the upper figure that there were two pulses in the measure, and (2) by the under figure that each pulse was to be the fourth part of a semibreve, *viz.*, a crochet, or the value thereof in shorter notes. The figures $\frac{2}{2}$ (given in par. 72) denote (1) that there are two pulses in the measure, and (2) that each pulse is to be a minim or the *value* of a minim. The order of accents would be exactly the same as in $\frac{2}{4}$, but the pulse or beat would be *represented* by a *different note.* So far as sound and rhythm are concerned, the following in every respect are the same:—

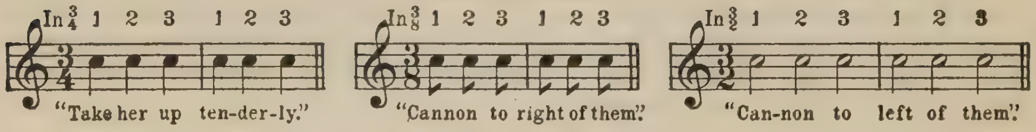




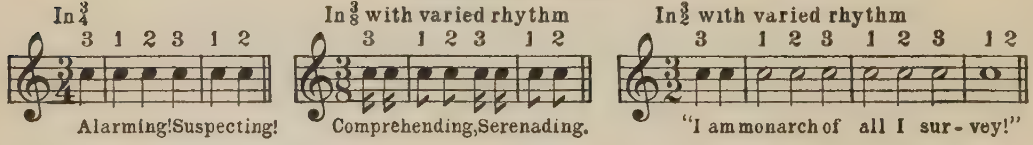
In music, written or printed, each measure must be complete. Thus, as in above, when we begin with a strong pulse we end with a weak, and *vice versâ.* The odd pulse at the commencement, in the secondary forms above, and that at the finish, make a complete measure.

**74.** When the order of accents comes as in the line, | "Bird of the | wilderness" ‖, where the "foot" is called in prosody a "Dactyl," we have, musically speaking, a strong followed by two weak accents. This has received the name "Simple Triple time," and is known wherever in time signatures the figure three (3) is the upper of the two numerals. Thus $\frac{3}{4}$ would mean three crotchets, $\frac{3}{8}$ would imply three quavers, $\frac{3}{2}$, three minims in a measure, or the value of the same in each case.

PRIMARY FORMS

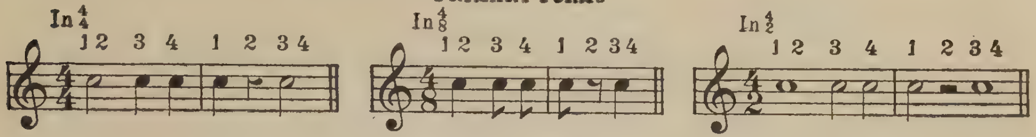

In $\frac{3}{4}$ 1 2 3 1 2 3
"Take her up ten-der-ly."
In $\frac{3}{8}$ 1 2 3 1 2 3
"Cannon to right of them."
In $\frac{3}{2}$ 1 2 3 1 2 3
"Can-non to left of them."

SECONDARY FORMS

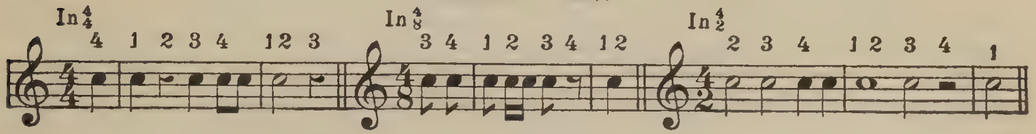

In $\frac{3}{4}$
3 1 2 3 1 2
Alarming! Suspecting!
In $\frac{3}{8}$ with varied rhythm
3 1 2 3 1 2
Comprehending, Serenading.
In $\frac{3}{2}$ with varied rhythm
3 1 2 3 1 2 3 1 2
"I am monarch of all I sur-vey!"

**75.** Not unfrequently every second strong pulse of duple time is alternated with one of more moderate force, which is therefore called the *medium* accent. This extends the measure to *four* accents or pulses, *viz.*, *strong*, *weak*, *medium*, *weak*, which, in turn, is called "Simple Quadruple Time," and is invariably indicated when the figure four (4) fills the place of the upper numeral in time signatures. This kind of time is so often used, especially with a crotchet to a pulse, that it is often spoken of as "Common Time," which is held to be indicated when, instead of figures, a big C occupies the place of time signature. Figures have, however, the advantage of being distinct, and the name "Quadruple" calls attention to the number of pulses to be found or expected in the measure; whereas the name "Common" applies, or should apply, to all the forms of duple as well as quadruple measures. The figures $\frac{4}{4}$ indicate four crotchets, $\frac{4}{8}$ four quavers, $\frac{4}{2}$, four minims, and $\frac{4}{1}$ (seldom seen), four semibreves, or, in each case, value for these, in a measure. Such words as "February," "momentary," &c., may serve to convey some idea of the *primary* form of this measure. To begin on any but the strong accent would give a secondary form. Examples :—

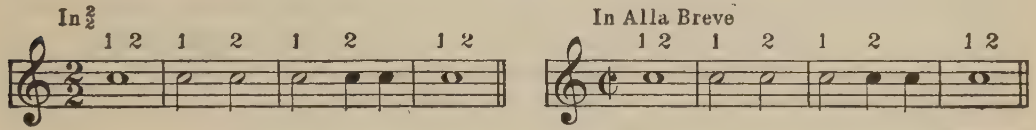
Primary Forms



Secondary Forms

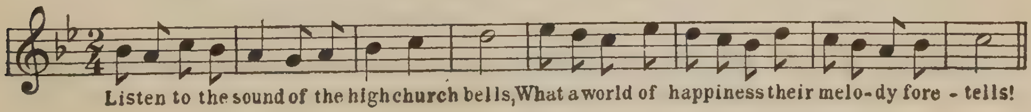


**76.** A large C with a line drawn through it, thus 𝄵, is also occasionally employed as a time signature, and is held to indicate what is called *Alla Breve* (*i.e.*, after the manner of the breve) time. Practically it is equivalent to simple duple time with a minim for a pulse, otherwise $\frac{2}{2}$.

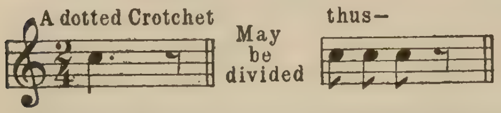


It should be clearly understood that there is no absolute time as so many seconds or minutes associated with any of these under figures. Whatever that figure may be, it simply shows that the note indicated is to be considered as the pulse or beat; and these pulses may be taken at a slow or rapid *rate of movement* as desired, or as suggested by the style of the music to be performed. Custom, however, seems to say that minims, as in $\frac{2}{2}$, $\frac{3}{2}$, or $\frac{4}{2}$ times, are considered more appropriate for church music than crotchets and shorter notes, but there is no rule on the subject. The rate of movement can be, and frequently is, precisely indicated by an instrument called a "metronome," from which, by raising or lowering a weight attached to a pendulum, any rate, from forty-eight to one hundred and forty-four pulses in the minute, may be obtained. M. ♩= 78 would show, when placed at the beginning of a piece of music, that this musical time-marker was to be set a-swinging at the rate of seventy-eight in the *minute*, and that a crotchet or its value was to be performed for every pulsation.

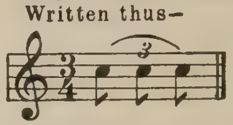
**77.** We come now to what are known as the compound times. These and the necessity for them can be best explained and illustrated by the accent and rhythm employed in ordinary speech. Although not generally observed, it may easily be demonstrated that all language is delivered in pulsations, *one* word or syllable often demanding as much time for itself as three or four put together. The following lines distinctly enunciated will be felt to call for something at least akin to the rhythm given :—


Listen to the sound of the high church bells, What a world of happiness their melo-dy fore - tells!

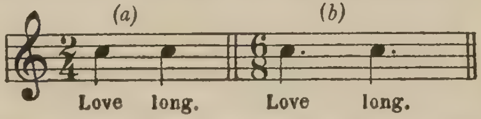
Here the words "sound," "high," "church," and "bells" must each receive at least a whole pulse, while the others run in half-pulses; the syllables come in couples. Extending our illustrations to words or groups of three syllables, we find that the dotted note best lends itself



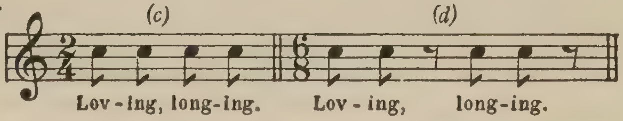
to expression of the rhythm, *i.e.*, it is most readily and easily divisible into *three equal parts* as— and that if we write music for such words as "rapidly," "knowingly," "beautiful," &c., or for such lines as "Oh | where-are-you | going, sweet | Robin ?" where, with the exception of the first and last words, the syllables seem to arrange themselves in groups of three, we must either have abundant recourse to the triple— or invent another time-form to bring out our meaning. This time-form is found in what is called compound duple time (or six-pulse measure), which, when performed slowly, stands in much the same relation to three-pulse measure, or simple triple time, that quadruple does with regard to two; that is to say, it changes every *second* strong pulse into one of medium force. For beautiful examples of this measure and of music requiring to be so performed, see "Oh Lovely Peace"—("Judas Maccabæus,"—Handel), "Oh thou that tellest"—("Messiah,"—Handel), "How lovely are the Messengers"—("St. Paul,"—Mendelssohn), and many others. Such words as "Med-i-ter-ra-ne-an," "spir-it-u-al-i-ty," "pu-sil-lan-im-i-ty," where the accents seem to come in the order STRONG, weak, weak, MEDIUM, weak, weak, may assist in conveying some idea of what is required.



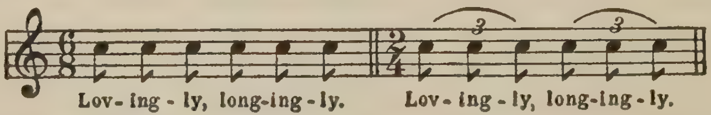
**78.** In most cases, however, six-pulse measure moves so quickly that we feel as if a kind of *two*-pulse measure were being performed, hence its name, *compound duple time.* Let us endeavour to show the relation between two- and six-pulse measures (duple and compound duple) with the assistance of one or two homely and familiar words.



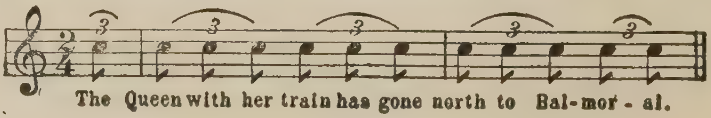
In (*a*) the pulse or beat is represented by a crotchet, easily divisible by such multiples as two, four, or eight; in (*b*) the pulse is represented by a *dotted* crotchet, divisible by three or multiples of three. In both cases a pulse, *one distinct whole*, is represented, which we now proceed to break up.



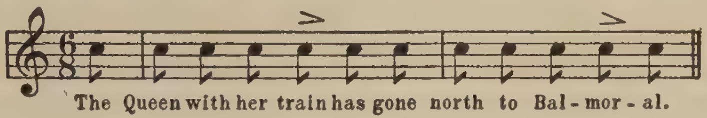
In (*c*) the given words fall naturally and without break into their places; in (*b*), if we are to preserve the proper accent of six-eight time, we require the last third of each pulse (*i.e.*, the dotted crotchet) to be silent, as the words properly belong to the simple, not the compound time-form. Extending the words to three syllables, we find that the *dotted* note best lends itself to expression of the rhythm, and that if we continue to write in *two-four* time we must have recourse to triplets to bring out our meaning.



Further to illustrate this somewhat difficult subject—difficult, because the *real* accent is never shown by the time signature—let us take the following line—



This would in simple duple time require to be written as above with triplets, but in compound duple, in which the triplets give the *natural* order of the accents, thus—

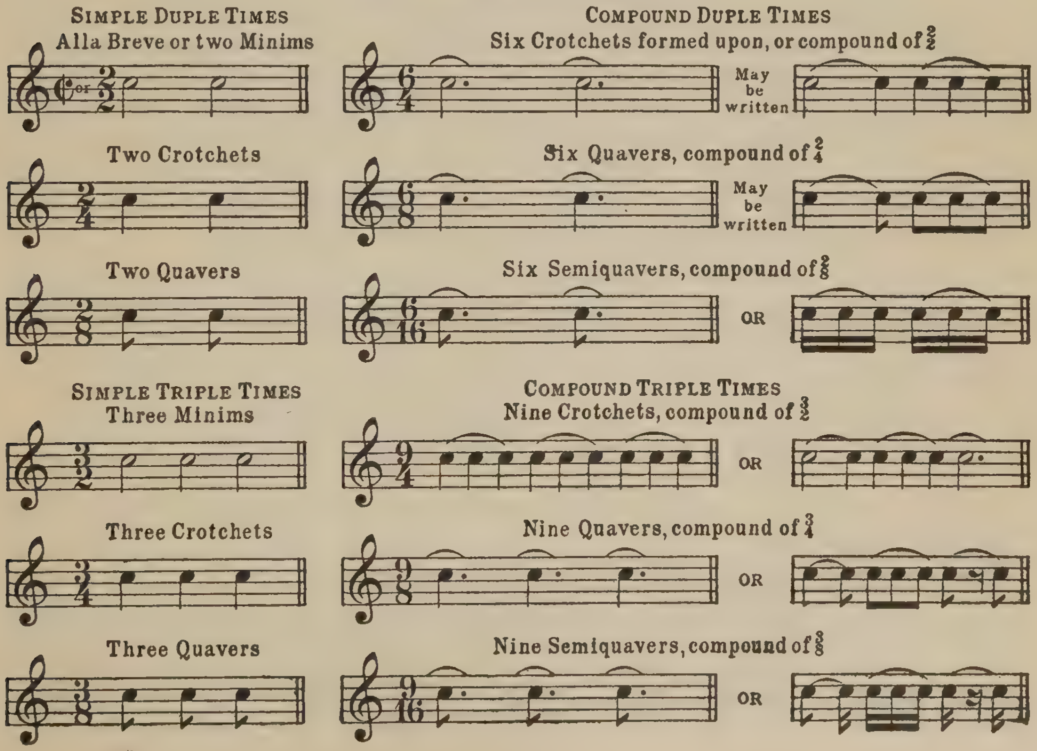


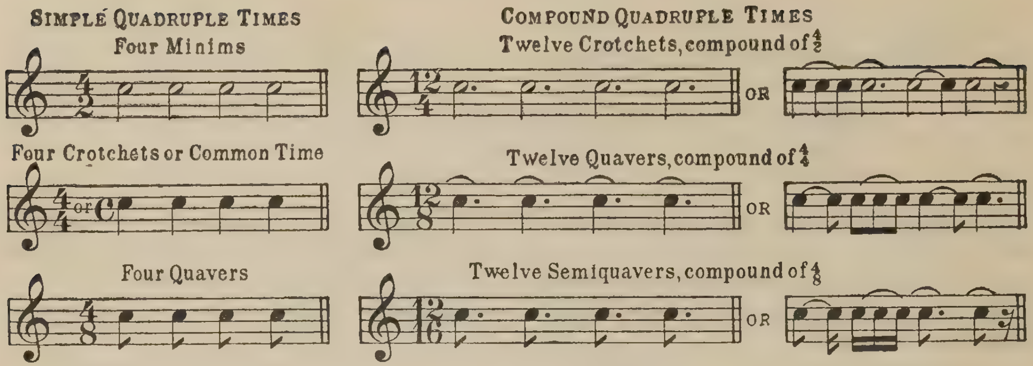
These examples sung on one tone will be felt to be the same in accentuation and musical effect. Musicians have thus two ways of writing for this order of accents—either in the simple time-form with the use of a great many triplets, or in compound without these aids.

**79.** Rule.—The compound of *any* simple time is found by *adding a dot* to the pulse note. Examples will follow.

**80.** What has just been said applies with equal force to the compounds of simple triple and simple quadruple time-forms, *i.e.*, a dot after each pulse of the simple gives the compound; and the *lowest note multiple* of this dotted note when divided by three is taken as the *under* figure to be placed in the time signature. Thus in three-four time we have three crotchets (♩ ♩ ♩) in a measure; in the compound of three-four we have three *dotted* crotchets (♩. ♩. ♩.), which gives, when each is broken up into three parts, a quaver as the lowest note, so that instead of the dotted notes we may have *three times three quavers* or $\frac{9}{8}$ in the measure. In all the compound times it will be seen and felt that the representation of the triplet form of rhythm is chiefly what is aimed at; in other words, while the effect of a whole pulse is always the same whether represented by a simple *whole* or a *dotted* note, these pulses when broken up into two and the multiples of two belong to the simple time-forms; while three and the multiples of three distinguish the compound.

TABLE OF TIME SIGNATURES




SIMPLE QUADRUPLE TIMES
Four Minims
Four Crotchets or Common Time
Four Quavers
COMPOUND QUADRUPLE TIMES
Twelve Crotchets, compound of $\frac{4}{2}$
OR
Twelve Quavers, compound of $\frac{4}{4}$
OR
Twelve Semiquavers, compound of $\frac{4}{8}$
OR

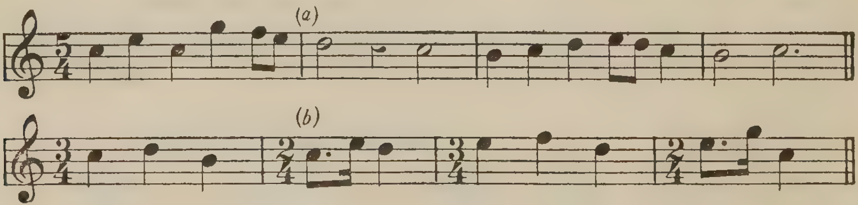
For the sake of completeness, a few additional signatures of times that are seldom employed may here be given :—

Simple duple, $\frac{2}{32}$, and $\frac{2}{1}$. Compound duple, $\frac{6}{32}$ and $\frac{6}{2}$.
" triple, $\frac{3}{16}$. " triple, $\frac{9}{32}$.
" quadruple, $\frac{4}{16}$ and $\frac{4}{32}$. " quadruple, $\frac{12}{32}$.

When compound triple and compound quadruple times are sung or played slowly, and nine or twelve pulses are counted, although there is only one strong accent, the first of every three pulses that succeed is turned, as in the case of compound duple time, into an accent of medium force. Nine-pulse measure or compound triple time would thus consist of strong, weak, weak, medium, weak, weak, medium, weak, weak, and so relatively with twelve in the measure.

**81.** Exceptional rhythms and methods of writing.

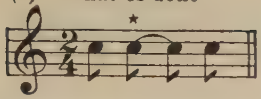
In many instances $\frac{4}{4}$ or common time might have $\frac{8}{8}$ for time signature, requiring, as it does, to be performed with a quaver for a pulse. Two measures of quadruple time, in all such cases, are simply written as one. Handel's "He was despised" ("Messiah"), and Mendelssohn's "O rest in the Lord" ("Elijah") are familiar examples. Not unfrequently waltz tunes, written in simple triple time, require to be performed so quickly that the hearer can discern only one pulse in the bar or measure. In all such cases some form of compound duple would much more correctly represent the actual time of the music. Very exceptional cases of what may be called quintuple or five-pulse measure, and also, for special and possibly comic effects, alternate measures of duple and triple time are to be found.



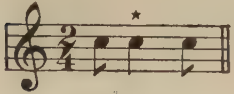
A well-known example of the use of $\frac{5}{4}$ time occurs in the *Allegro con Grazia* of Tchaikovsky's "Pathetique" symphony.

**82.** SYNCOPATION in music means that, for a particular effect, a strong accent is brought in where a weak accent or weak *part* of an accent is expected. The strong accent is thus anticipated, and the order of accents is changed from duple or quadruple to the triple time arrangement, or *vice versâ*. Thus if we write in quavers a measure of $\frac{2}{4}$ time, by joining the last quaver of the *first*, and the first quaver of the *second* pulse together, a syncopation is produced, and what is really a measure of $\frac{3}{8}$ time is introduced in the course of a $\frac{2}{4}$ time movement.

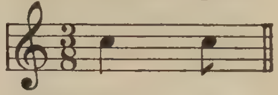
(a) What is done



(b) As written



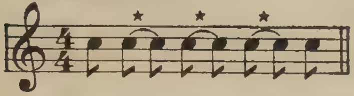
(c) Effect of syncopation apart from starting note



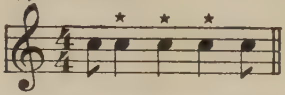
The mark * shows the syncopated note.

So in $\frac{4}{4}$ time, if we take six of the eight quavers into which the four crotchets may be changed, and bind them together as above, a measure of $\frac{3}{4}$ time is produced in the course of a quadruple time movement.

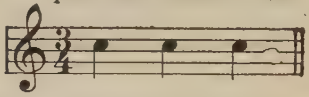
(d) What is done



(e) As written

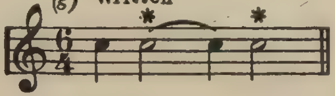


(f) Effect of syncopation apart from the other notes

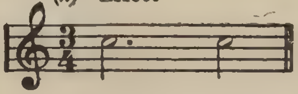


By syncopation in compound duple time, and *according to its position*, simple triple or quadruple accent is produced.

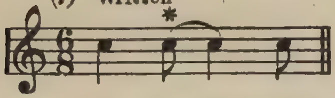
(g) Written



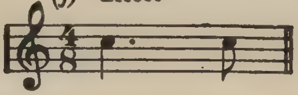
(h) Effect



(i) Written



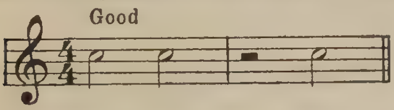
(j) Effect

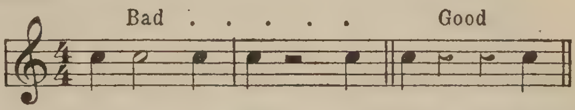


These effects, it should be said, are only approximate. To get a true idea of syncopation it must be *heard*.

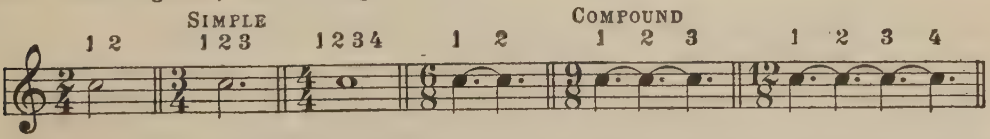
When performing syncopated notes, it is found convenient to think of them as made up of two parts (which they really are), in the manner shown in (*a*) and (*d*) above. It is then felt as if there were a kind of double accentuation, and the difficulties of the executant are greatly lessened.

**83.** Music should be so written or printed as clearly to indicate the time apart altogether from the time signature. In writing, a good general rule is, *keep in notes and rests as near to the pulse note as possible*, although it is quite common to group a run of quavers in fours, either in instrumental music or when, in vocal music, these notes are sung to the same syllable. In $\frac{4}{4}$ time, however, such grouping must not cross the medium accent, *i.e.*, must not occur between pulses 2 and 3. (See Examples to paragraphs 26, 44, and 45.) Unless syncopation is intended, notes or rests longer than a pulse should only appear at the *beginning*, or, where there are more than three pulses, in the *middle* of a measure.

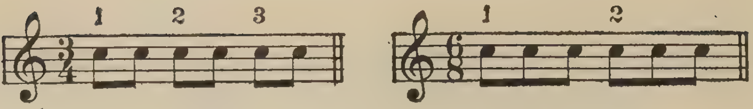




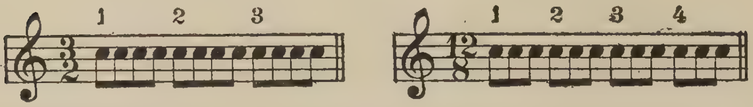
In simple duple, triple, and quadruple times, one note may be employed to fill up the measure; but if this is done in the compounds, the number of pulses should be written and then tied or bound together, thus showing the accent.



**84.** Except when words are to be provided for, notes shorter than crotchets should be so grouped as to show the *pulses*. Short study of the following examples will make the necessity for this apparent.



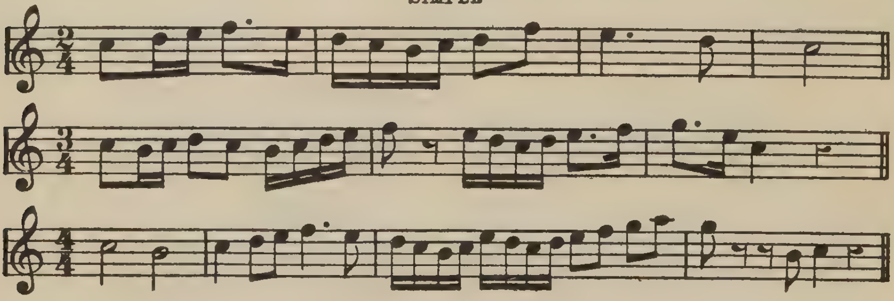
Three Accents  Four Accents



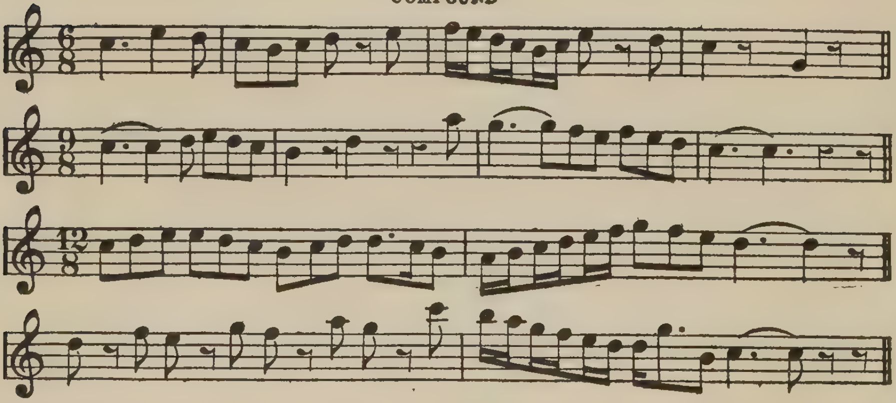
It will thus be seen that in music, three twos are *not* the same as two threes, nor are three fours equivalent to four threes. Accent is paramount. (See also par. 24.)

Here follow a few examples in writing and grouping :—

### SIMPLE



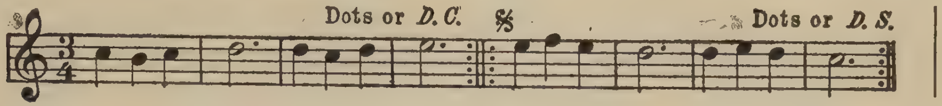
### COMPOUND



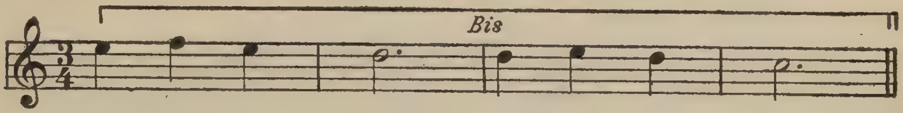
Rule for writing rests. The semibreve rest is always employed to indicate a silence of *one complete measure,* whatever the time of that measure may be ; except in *Alla Breve* time, when the breve rest is used. The figure 2 placed over a measure of rest or silence would indicate *two* measures' rest, the figure 3 *three* measures, and so on to any number.

## ABBREVIATIONS, ORNAMENTATION, AND EXPRESSION.

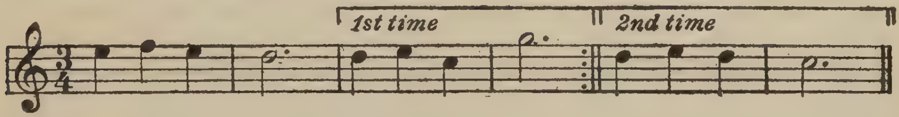
**85.** Necessity for the repetition of a passage is shown in two ways : First, by dots, either two or four, placed in the spaces immediately in front of the double bar, which indicate that the strain or passage is to be repeated, either from the beginning or from a *previous* double bar. If from the latter, then similar dots are placed *behind it,* drawing attention to the point to which the return has to be made : Second, by the initial letters of words drawn from the Italian language, as D.C. for *Da Capo* (the beginning), and D.S. for *Dal Segno* (the sign). A big S with dots and a line drawn through it, :𝄋:, stands for the sign. In the following cases either dots or letters (not both) may be used :—



In cases like the above, it should here be said that dots are most frequently employed. The letters are in general reserved for the repetition of long movements as the minuet and trio, in instrumental works. The word *Bis* (twice) written under a bracket also shows that a passage is to be repeated, as—

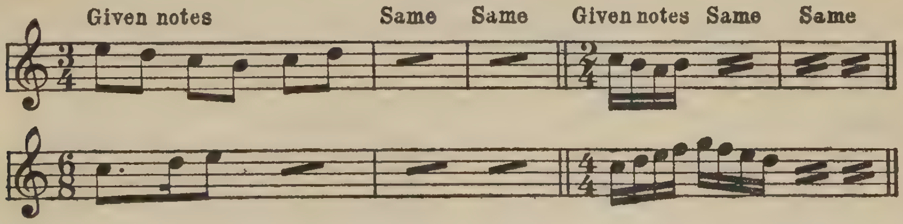


Not unfrequently when a passage is repeated, a slight alteration of the music is made towards the close, for the sake of variety; in this case, the words "first time" and "second time" are written under a bracket showing where the change takes place.

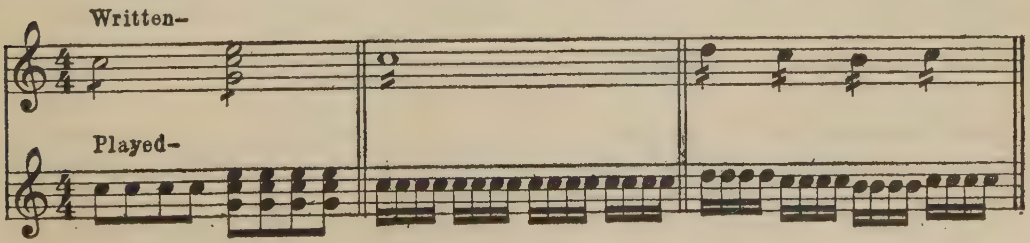


It should be clearly understood that the measures marked "first time" are *omitted* in the repetition.

**86.** When the music of one measure (or, if broken up into short notes, any pulse in a measure), is to be repeated in the next, a line or lines, according as the notes indicated are quavers or notes of less value, is or are written instead of the notes themselves. In this way much labour and space are saved, and the passages so treated are actually made clearer.

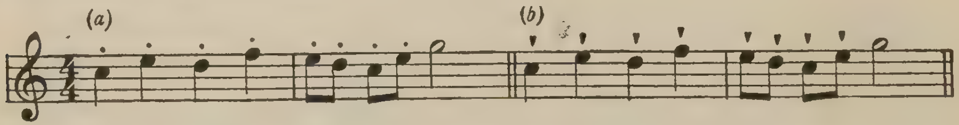


Simple reiteration of a note or a chord—a device much used in instrumental music—is frequently shown by a long note, as semibreve or minim, being written with a line or lines underneath or above, to indicate the nature of the reiteration, as quaver or note of less value.



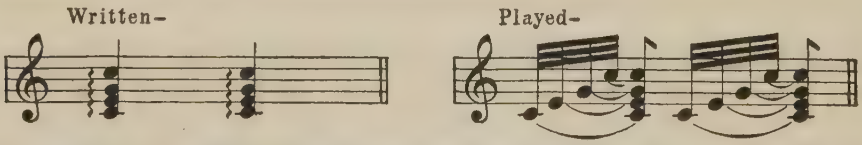
When *tremolo* or *tremolando* or *trem.* is written over any such passages as those just given, it implies that the notes are to be repeated as rapidly as possible without attending to the exact number of notes played, having always regard to the pulsations or beats.

**87.** When a note or rest is to be prolonged for any indefinite period, this sign 𝄐 called a "Hold" or "Pause," is written over or under it. The word "*Fine*" (finish) is generally used after a repeat or Da Capo, to show that at that point the piece is to close. A "*Slur*" ⌢ shows that two or any number of notes so bound together are to be *sung* to one syllable, or played in as connected (*legato*) a style as possible. When only two notes are so bound together, the first should be somewhat accentuated, the second passed over lightly. The "Tie," or "*bind*," of the same form as the slur, but placed over two or more notes at the *same pitch*, was explained in par. 25. The word "*Staccato*" implies that the notes in a passage so marked are to be performed in a short, detached manner; but dots or little pointed dashes written over the notes show that the same effect is desired.

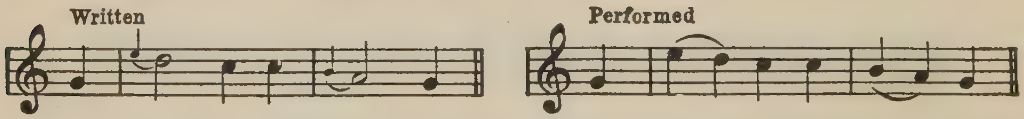


The latter of these (*b*) indicates that the sounds are to be much shorter and sharper than with the former (*a*); in both cases there should be a complete, though short, silence between the notes. A slur placed over the dots indicates a less detached effect (*mezzo-staccato*).

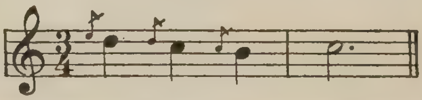
**88.** When the notes of a chord, instead of being struck together, are to be struck in succession, after the manner of a harp, the word *arpeggio*, or *arpeggiando*, is written over, or this mark ⌇ is placed in front of the notes of which the chord consists.



The "*appoggiatura*" (leaning note) implies that the element of discord is being introduced into the harmony. Originally the appoggiatura was written small, as if composers were ashamed of its appearance on their pages; but in modern times it is nearly always seen as a note of full size. The latter manner of writing has the advantage of showing the note as it always was, and ought to be performed.



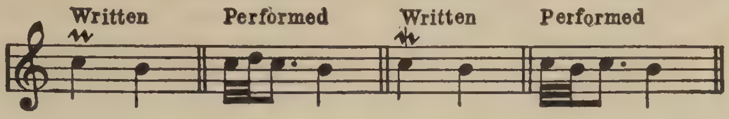
The name "*acciacatura*" (to crush) describes (over-vigorously) the effect of a small note, with a very light line drawn through its stem and hook, written, like the old form of the appoggiatura, when that appeared as a quaver. It should be played as brightly and quickly as possible.



Such *anticipatory notes* are often seen before a strong or medium accent. They are usually printed in small characters, and are usually played *before* the pulse (or beat) of the note they precede.

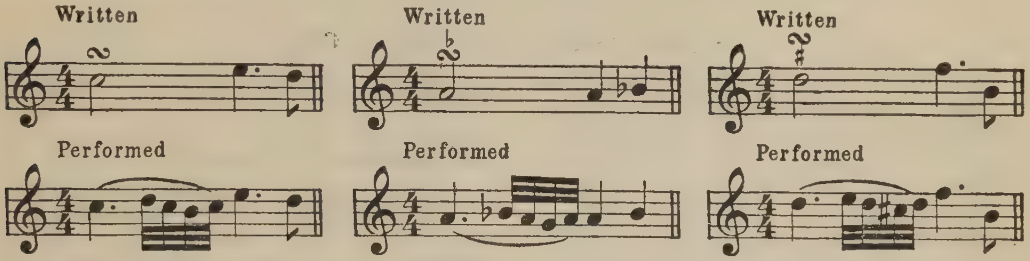
The "*mordent*" is frequently written out in full; but occasionally it is shown by the sign ∿

being placed over the note in connection with which it is to be introduced. It produces a kind of wavering effect by the note immediately above the principal note being *very briefly* touched.

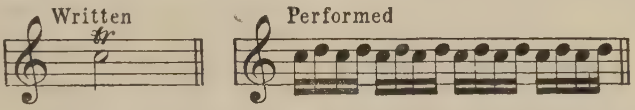


When the sign has a vertical line through it, the ornament takes the lower note.

The "*turn*" (Ital. *gruppetto*) (∾) goes both *above* and *below* its principal, for auxiliary notes, before it returns to that from which it started, thus making in all a group of five. When a flat or sharp is written above or below, the notes of the turn over or under the principal note are to be inflected accordingly.



The inverted turn begins with the *note below*, instead of the note above, sharp or flat being inflected in the manner just described. The turn is a simple, effective and much used—we had almost said much abused—ornament. The "*shake*," or trill (*tr*), is the regular and rapid alternation of two notes either a tone or a semitone apart.



A flat or sharp over the "*tr*" would show that the *upper* or *lower* of the two notes was to be inflected, as respectively these would direct. A turn is frequently introduced at the close of the shake as if to impart a kind of finish thereto.

**89.** Full command of the various degrees of force or intensity with which tones may be struck is a great source of power in a performer. The words describing these degrees are all taken from the Italian language. The following table gives (1) the names, (2) the abbreviations, and (3) their definitions :—

| NAME. | PRONOUNCED. | MARKED. | MEANING. |
|---|---|---|---|
| Pianissimo | Pe-ah-nissimo | *pp* | Very soft. |
| Piano | Pe-ah-no | *p* | Soft. |
| Mezzo-piano | Met-zo-pe-ah-no | *mp* | Moderately soft. |
| Mezzo | Met-zo | *m* | Medium. |
| Mezzo-forte | Met-zo-four-tay | *mf* | Moderately loud. |
| Forte | Four-tay | *f* | Loud. |
| Fortissimo | Four-tiss-imo | *ff* | Very loud. |
| Crescendo | Cre-shen-do | *cres.* or < | Increase the sound. |
| Diminuendo | Dimin-oo-en-do | *dim.* or > | Diminish the sound. |
| Swell | .. | <> | Increase and diminish. |
| Sforzando | Sfort-zan-do | *sf* or *fz* or > | A strong accent. |
| Legato | Lay-gah-to | .. | Smooth, connected. |
| Rallentando | Ral-lan-tan-do | *rall.* | Gradually slower. |

**90.** Of the words describing the manner in which music is to be performed, it may be truly said that their name is legion. Some of the more prominent are here given. A dictionary of musical terms is the subject of the next chapter.

## CHAPTER II

# MUSICAL TERMS

### MUSICAL TERMS IN COMMON USE.

**A** (*It.*), (*āh*), At, by, for, &c.; *a tempo*, in time; *a piacere*, at pleasure.

**A** (*Fr.*), (*ā*), By, with, for, &c.; *à deux mains*, for two hands.

**A Ballata** (*It.*), (*āh băl-ātā*). In the ballad style.

**Abandonamente** (*It.*), (*āh-bănd-on-ā-men-tay*)
**Abbandono, con** (*It.*), (*āh-bănd-ō-nō*)
**Abandon** (*Fr.*),
} With self-abandonment; despondingly.

**A Battuta** (*It.*), (*băt-ūt-a*). In strict time.

**Abbreviare** (*It.*), (*a-brĕvī-ār-ay*). To shorten.

**Abendglocke** (*Ger.*), (*a-bend-glock-e*). The curfew.

**Abendlied** (*Ger.*), (*ā-bend-leed*). An evening song.

**A bene placito** (*It.*), (*baynay plac-eetō*). At pleasure.

**Abgestossen** (*Ger.*), (*ab-ges-tossen*). Staccato.

**Ab initio** (*Lat.*). From the beginning.

**Abnehmend** (*Ger.*), (*ăbnē-mĕnd*). Diminuendo.

**Absatz** (*Ger.*), (*ăb-săts*). Cadence.

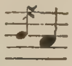
**A cappella** (*It.*), (*capp-ella*). In the Church style, choral pieces when unaccompanied.

**A capriccio** (*It.*), (*ah ca-pree-tche-o*). At will.

**Accarezzevole** (*It.*), (*ah-car-ets-ay-vol-ay*). Caressingly.

**Accelerando**
**Accelerato**
} (*It.*), { (*ā-tchĕler-ăn-dō*)
(*ā-tchĕl-er-ātō*) } Gradually increasing the pace.

**Accent.** The emphasis placed on certain notes recurring at regular intervals of time. A recurring succession of accents produces rhythm.

**Acciacatura** (*It.*), (*a-chi-ak-a-tūra*). A short grace note  with a cross line drawn through it.

**Accidentals.** Sharps, flats, or naturals, employed in a composition beyond those marked in the signature.

**Accolade** (*Fr.*). The bracket { used for combining music-staves.

**Accompaniment.** A subordinate vocal or instrumental part, or combination of parts, supporting solo voices or instruments.

**Achromatic.** Not chromatic.

**Achtelnote** (*Ger.*). The eighth part of a semibreve; a quaver ♪

**Acoustics.** The science treating of the nature of sound.

**Action.** The mechanism of an organ or piano.

**Adagio** (*It.*), (*adajio*). Slowly.

**Adagio assai**
„ **di molto**
} Very slowly.

„ **cantabile.** Slowly, and as if singing.

„ **patetico.** Slowly and pathetically.

„ **pesante.** Slowly and massively.

„ **sostenuto.** Slow and sustained.

**Addolorato** (*It.*), (*ad-ol-or-ahto*). Sorrowfully.

**A deux** (*Fr.*), (*du*)
**A due** (*It.*), (*du-ē*)
} For two voices or instruments.

**A due corde** (*It.*), (*ah du-ay cord-ay*). On two strings.

**A deux mains** (*Fr.*), (*a du mang*). For two hands.

**Ad libitum** (*Lat.*). At will.

**Affabile** (*It.*), (*a-fa-beel-ay*). In a kindly manner.

**Affettuoso** (*It.*), (*affet-tu-oso*). Affectionately.

**Affrettando** (*It.*), (*ā-frĕt-ănd-o*). Hastening the time.

**Agitato** (*It.*), (*aj-it-āt-ō*). An agitated style in playing or singing.

**A Grand Orchestre** (*Fr.*), (*a gran' orkestr'*). For the full orchestra.

**Air.** A melody.

**Albumblätter** (*Ger.*), (*album-blaeter*). Album leaves.

**All' $8^{va}$ alta** (*It.*), (*ăl ottāva altā*). In the octave above.

**All' $8^{\text{va}}$ bassa** (*It.*), (*ăl ottāva băssa*). In the octave below.

**Alla breve** (*It.*). The time in which there are two minims in a bar, marked $\frac{2}{2}$ or 𝄵.

**Alla zoppa** (*It.*). Syncopated.

**Allargando** (*It.*), (*ăl-ār-gando*). With breadth.

**Allegramente** (*It.*), (*al-ēgr-amen-tay*). Cheerfully.

**Allegretto** (*It.*), (*al-ay-gr-ĕtto*). Less quick than Allegro.

**Allegro** (*It.*), (*al-āy-gro*). Joyful, quick. The word Allegro is used in conjunction with a variety of others which serve to modify, or to invest it with a certain desired shade of meaning, as Allegro con fuoco, quickly, and with fire; Allegro ma non tanto, quickly, but not too much so; &c. &c. In common with many other musical terms, Allegro is very often used as a convenient name for some composition otherwise without a title.

**Alleluia** (*Lat.*). Hallelujah (*Hebrew*), Praise ye the Lord.

**Allemande** (*Fr.*), (*ăl-i-mand*). A dance-tune. Originally peculiar to Germany and Switzerland.

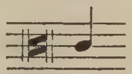
**Al Segno** (*It.*), (*ăl sayn-yo*). To the sign. This, or the character :𝄋:, indicates that the performer must return to a similar figure in the course of the movement, and play from that place to the *Fine*.

**Alt** (*It.*). The notes in the octave beginning with G above the treble stave are said to be *in alt*.

**Alta** (*It.*). High or higher—$8^{\text{va}}$ *alta*, an octave higher.

**Altgeige** (*Ger.*), (*alt-gij-e*). The viola.

**Alto clef.** Originally the clef in which alto parts were written



("Middle" C of the pf.)

Now used for the viola and the alto trombone.

**Alto voice.** The deepest tone of voice among women and boys, the highest among men.

**Amabile** (*It.*), (*ama-beel-ay*). Sweetly, tenderly.

**A monocorde** (*Fr.*). On one string.

**Amore, con** (*It.*), (*con amor-ay*). With tenderness.

**Amoroso** (*It.*). Lovingly.

**Andante** (*It.*), (*ăn-dănt-ay*). Lit., Walking, a moderate pace. Like *Allegro*, Andante is frequently used coupled with other words, as, *Andante con moto*.

**Andantino** (*It.*). Authorities differ as to whether this term means a little quicker or slower than Andante.

**Anglaise** (*Fr.*). The English country-dance.

**Anima, con** (*It.*). With animation.

**Animato** (*It.*), (*anim-ahto*). Lively.

**Animoso** (*It.*). With spirit.

**Anthem.** A sacred composition for voices, with or without accompaniment.

**Antiphonal.** The responsive singing of choirs.

**A piacere** (*It.*), (*a pia-cher-ay*). At pleasure.

**A poco a poco** (*It.*). Little by little. (Increase or diminution of pace or power.)

**A poco più lento** (*It.*). A little slower.

**A poco più mosso** (*It.*). A little faster.

**Appassionato** (*It.*). With passion.

**Appoggiatura** (*It.*). A grace note.

**A punta d'arco** (*It.*), (*ā poonta d'arko*). With the point of the bow.

**A quatre mains** (*Fr.*), (*a katr mang*). For four hands, as a pianoforte duet.

**Archet** (*Fr.*), (*ar-shay*). The bow with which stringed instruments are played.

**Arco** (*It.*), (*arko*). The bow.

**Aria** (*It.*), (*a-ree-a*). An air.

**Arietta** (*It.*) }
**Ariette** (*Fr.*) } A short air.

**Arioso** (*It.*). In the style of an air.

**Arpeggio** (*It.*), (*ar-pej-io*). In the style of harp-music; chords "broken" or "spread."

**Assai** (*It.*). Very, *e.g.*, *Allegro assai*—very quick.

**A tempo** (*It.*). In time.

**Attacca** (*It.*), (*attack-ah*). Commence at once.

**Attack.** A prompt entry of voices or instruments at the commencement of a piece or portion of a piece.

**Aubade** (*Fr.*), (*o-bad*). A morning song, as opposed to Abendlied (*Ger.*), evening song.

**Audace** (*It.*), (*oud-a-tchay*). Bold, audacious.

**A una corda** (*It.*). With one string; in pianoforte music a direction to use the soft pedal.

**Ausgabe** (*Ger.*), (*ows-gab-e*). Edition.

**Bagatelles** (*Fr.*). Short pieces.

**Bagpipe.** A wind instrument: formerly known to nearly every nation in the world.

**Baguettes** (*Fr.*). Drumsticks.

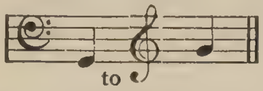
**Ballad.** A popular song. Primarily of a narrative kind, such as "Chevy Chase," "Lord Rendal," &c.

**Band** (*Ger.*). A volume.

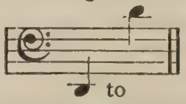
**Bar.** A line drawn through the stave to mark the division of the time in music. The space *between* two such lines.

**Barcarole.** A melody imitated from the songs of the Venetian gondoliers.

**Baritone.** A voice in character midway between a bass and a tenor. Compass:



**Bass, Basso.** Low, as bass voice, bass trombone. Bass voice, lowest register of human voice. Compass:



**Basset-horn.** An instrument of the clarinet kind.

**Bassoon.** A reed wind instrument. Ordinarily forms the bass among wood-wind instruments.

**Bâton** (*Fr.*). A stick used in conducting.

**Beat.** The portion of a bar occupied by one motion of the bâton.

**Becken** (*Ger.*). A cymbal.

**Begleitung** (*Ger.*), (*beg-leit-ŭng*). Accompaniment.

**Ben** (*It.*). Well—*Ben marcato*, well marked.

**Berceuse** (*Fr.*). A cradle-song.

**Binary form.** The form of a movement founded on two principal themes.

**Bind.** A sign ⌒ or ⌐ placed over two or more notes, and indicating that these notes are to be sustained as one.

**Bis** (*Lat.*). Twice. Indicates that a passage is to be performed twice.

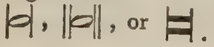
**Bolero** (*Span.*). A Spanish dance in triple measure.

**Bombardon** (*Fr. and Ger.*). A brass instrument which plays the bass in a military band.

**Bourrée** (*Fr.*), (*bour-ray*). A dance-tune in common time. Supposed to have originated in Auvergne.

**Bratsche** (*Ger.*), (*brat-she*). The viola.

**Breve.** The longest note now in use. Written



**Brillante** (*It and Fr.*), (*Italian—bre-lan-tay*). Brilliant.

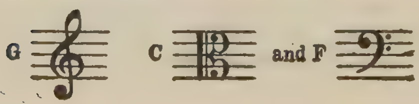
**Brindisi** (*It.*). A drinking-song.

**Brio, con** (*It.*), (*breeo*). With spirit and vigour.

**Buffa,** *fem.* }
**Buffo,** *masc.* } (*It.*). Comic.

**Bugle.** A hunting horn. A military wind instrument.

**Clef, also Cleff, Cliff, Clief** (*Lat. Clavis*, a key) A sign placed on the staff to indicate the name and pitch of any note thereon. The three clefs now in common use are the



**Cadence.** The end of a phrase; a close.

**Cadenza** (*It.*), (*cā-dent-sa*). An embellished and elaborated section in a song or instrumental movement, usually near the close.

**Calando** (*It.*), (*cā-lan-do*). Becoming slower and softer; dying away.

**Calore, con** (*It.*), (*cal-or-ây*). With warmth.

**Camera, musica di** (*It.*), (*mus-eeka de camera*). Chamber music.

**Campanology.** The science of the construction and use of bells.

**Canon.** A composition in which a theme started in one part (or "voice") is imitated strictly by the other parts.

**Cantabile** (*It.*), (*can-ta-belay*). In a *singing* style.

**Cantata.** A short choral work.

**Cantatrice** (*It.*), (*can-ta-tree-tchay*). A female singer.

**Canticle.** A hymn; a song of praise.

**Cantor.** Precentor. *Cantor choralis*, chorus master.

**Cantus firmus** (*Lat.*). A subject intended to be treated contrapuntally.

**Canzona** (*It.*). An old song-form.

**Canzonetta** }
**Canzonet** } Diminutives of Canzona.

**Capellmeister** (*Ger.*), (*ca-pel-my-ster*). Musical director of a church; also orchestral conductor.

**Cappella, alla** (*It.*). See "A cappella."

**Capriccio** (*It.*). A piece irregular and capricious in style.

**Capriccioso** (*It.*), (*ca-pree-tche-os-o*). Fanciful.

**Carillon** (*Fr.*). A set of bells; a tune for bells.

**Carol.** A song for festivals, especially Christmas. Originally a round-dance, with song.

**Castanets.** Wooden instruments of the clapper kind, used to accompany dance tunes in Spain, &c.

**Catch.** A humorous vocal piece in several parts.

**Cavatina** (*It.*), (*ca-va-teen-a*). A melody.

**Celli** (*tchel-li*). }
**Cello** (*tchel-lo*). } Abbreviations of violoncelli and violoncello.

**Chacona** (*Span.*), (*shak-o-na*) }
**Chaconne** (*Fr.*), (*shak-onn*) }
**Ciaccona** (*It.*), (*tchi-a-kona*) } A ground bass, *i.e.*, a bass repeated under varying harmonies and figuration. Originally a slow dance.

**Chamber Music.** Compositions suitable for performance in a *chamber* or room: instrumental trios and quartets, part-songs, &c.

**Chanson** (*Fr.*), (*shahn-song*). A song.

**Chant.** A short musical composition to which the daily psalms are sung in cathedrals.

**Chanterelle** (*Fr.*), (*shahn-ter-el*). The highest string on instruments played with a bow.

**Choragus** (*Lat.*), (*kor-agus*). Leader of the chorus in the ancient Greek drama. Title of a musical official at a University.

**Clarinet.** A wood-wind instrument.

**Col**
**Coll'**
**Colla** (*It.*). With the. *Coll' arco*—With the bow.

**Col legno** (*It.*), (*col layn-yo*). Lit. " with the wood " ; a direction to strike the strings of a violin with the back of the bow.

**Come** (*It.*), (*co-may*). As *Come sopra*—" As above."

**Con** (*It.*). With.

**Concerto** (*It.*), (*con-tchair-to*). A composition designed for the display of the resources of a soloist, and with an orchestral accompaniment.

**Concert-Stück** (*Ger.*). Concert-piece.

**Contra-Basso** (*It.*), (*con-tra-bahs-so*). The double-bass.

**Contra-Fagotto** (*It.*), (*fah-got-to*). Double bassoon.

**Cor anglais** (*Fr.*). English horn. A reed instrument of the oboe kind.

**Counterpoint.** The combination of parts of voices.

**Courante. Coranto.** An old dance-tune.

**Cracovienne** (*Fr.*), (*cra-co-vi-en*). A dance, originally peculiar to Cracow.

**Crescendo** (*It.*), (*kreshen-do*). Increasing.

**Crooks.** Short movable tubes by which the register of brass instruments is raised or lowered.

**Csardas. Czardas.** A Hungarian national dance.

**Cue.** The last words or notes of a preceding part inserted as a guide.

**Da capo,** *or* **D.C.** (*It.*), (*dah kahpo*). From the beginning. An indication that the performer is to return to the beginning of the piece, and repeat to the word *Fine*.

**De capo al segno.** Repeat from the sign :𝄋:

**Das selbe tempo** (*Ger.*), (*—selb-e—*). The same time.

**Decani** (*Lat.*). A term in cathedral music signifying the singers on the dean's, or south side of the choir, as opposed to " cantoris," the cantor's or precentor's side.

**Decrescendo** (*It.*), (*dekreshen-do*). Decreasing.

**Delicato** (*It.*), (*deli-kato*). Delicately.

**Diminuendo** (*It.*). Decreasing.

**Divertimento** (*It.*), (*divertimen-to*). A light pleasing composition.

**Divisi** (*It.*), (*divees-i*). Divided.

**Dolce** (*It.*), (*dol-tchay*). Sweetly.

**Dominant.** The fifth note or degree of the scale (*Soh*).

**Doppio** (*It.*), (*dop-pi-o*). Double. *Doppio movimento.* At twice the former speed—double-quick.

**Dot.** A point added to a note or rest, which increases the value of the note or rest by one half. A second dot increases the value of the previous *dot* by a half. Dots placed over notes signify that they are to be *detached. Slurred* notes with dots are to be played *mezzo-staccato.* Used in connection with double bars, dots signify a *repeat.*

**Double-bass.** The largest instrument of the violin kind.

**Double chorus.** Two distinct choirs, singing separately or together. Music written for a double choir.

**Double concerto.** A concerto for two solo instruments and orchestra.

**Double stopping.** Playing two notes simultaneously. Applied to stringed instruments.

**Due corde** (*It.*), (*du-ay corday*). Two strings. A direction for a note to be played on two strings. An indication that the soft pedal of the pianoforte is to be raised.

**Dur** (*Ger.*), (*dour*). Major.

**Durchführung** (*Ger.*), (*dourk-feer-ung*). Working-out. Development Applied to the second portion of the Sonata form.

**Edel** (*Ger.*). Noble.

**Einfach** (*Ger.*). Simple.

**Elegante** (*It.*), (*elegan-te*). Elegant.

**Enharmonic.** On keyed instruments, notes similar in pitch although differing in name. G♯ is enharmonic equivalent of A♭.

**Ensemble** (*Fr.*). Together. *Ensemble playing*, concerted playing.

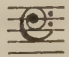
**Episode.** A section of a movement partaking of the character of a digression.

**Etude** (*Fr.*). Study, exercise, lesson.

**Etwas** (*Ger.*), (*et-vas*). Somewhat.—*Etwas langsam*, rather slow.

**Expression.** The art of bringing out the full significance of a composition.

**Extemporisation.** The simultaneous creation and performance of music.

**F clef.** The bass clef  indicating the note F.

**Facile** (*Fr.*), (*fas-eel*). Easy.

**Fagotto** (*It.*), (*fagot-to*). Bassoon.

**Falsetto** (*It.*), (*falset-to*). The artificial, or *false* tones of the voice as opposed to the natural, or chest tones.

**Fandango.** A Spanish dance in $\frac{3}{4}$ or $\frac{6}{8}$ time.

**Fanfare** (*Fr.*), (*fan-far*). A flourish of trumpets.

**Fantasia** (*It.*), (*fantazee-a*). A composition in a free, fanciful style.

**Fermata** (*It.*), (*fair-ma-ta*)
**Fermato** (*It.*), (*fair-ma-to*) A pause, 𝄐

**Figured bass.** A bass of single notes with the accompanying chords indicated by means of *figures*.

**Fine** (*It.*), (*feen-ay*). The end.

**Fingering.** The art of using the fingers properly in playing a musical instrument.

**Fiorituri** (*It.*), (*feeori-toori*). Ornaments in melody or accompaniment.

**Flageolet.** A small wood-wind instrument.

**Flourish.** A trumpet call, or fanfare; an ornamental passage.

**Fly.** The hinged cover of a pianoforte or organ key-board.

**Fois** (*Fr.*), (*fu-a*). Time.—*Première fois*, first time.

**Form.** The manner in which musical ideas are set forth.

**Fort** (*Fr.*), (*for*)
**Forte** (*It.*), (*for-te*) Loud, *f*.

**Fortissimo** (*It.*), (*fortis-simo*). Very loud, *ff*.

**Fortississimo** (*It.*), (*fortis-is-simo*). As loud as possible, *fff*.

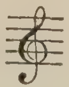
**Forza, con** (*It.*), (*fort-tsa*). With force.

**Forzando** (*It.*), (*fort-tsando*). Emphatic.

**Fuga** (*Lat.*). A fugue. (*See* article, **Fugue.**)

**Fugato** (*It.*), (*fug-ato*). In the style of a fugue.

**Funèbre** (*Fr.*), (*foon-aib*). Funereal; *Marche funèbre*, a funeral march.

**G clef.** The treble clef,  indicating the note G.

**Galliard.** An old-fashioned dance.

**Galop.** A lively dance in $\frac{2}{4}$ time.

**Gamut.** The scale.

**Gauche** (*Fr.*), (*gaush*). Left. Left hand.

**Gavot**
**Gavote**
**Gavotta**
**Gavotte** A dance-tune of French origin. Said to have been originally peculiar to the Gavots, or inhabitants of Gap, in France.

**Genus** (*Lat.*). Sort or class. Used with reference to scales; *diatonic genus, chromatic genus*.

**Gigue** (*Fr.*), (*jeeg*). Jig.

**Giocoso** (*It.*), (*jeo-co-so*). Humorous.

**Giojoso** (*It.*), (*jeo-jo-so*). Joyously.

**Giusto** (*It.*), (*jeoo-sto*). In equal, exact time.

**Glee.** A composition for voices, usually unaccompanied.

**Glissade** (*Fr.*), (*glees-sahd*). Gliding.

**Gondelied** (*Ger.*), (*gon-del-leed*). A gondolier song.

**Gracieux** (*Fr.*), (*grah-se-u*). Graceful.

**Grandioso** (*It.*), (*grahn-de-o-so*). Grand, magnificent.

**Grave** (*It.*), (*grah-vay*). Slow, solemn, and dignified.

**Gravemente** (*It.*), (*grah-vay-men-tay*). With gravity.

**Grazioso** (*It.*), (*grah-tche-oh-so*). In a graceful style.

**Ground-bass.** A bass passage, usually four or eight bars long, constantly repeated as the foundation for new melodies and harmonies.

**Hand-horn.** The French horn, without valves or pistons.

**Harpsichord.** A stringed instrument with a key-board, similar in appearance to a modern grand pianoforte.

**Hautboy.** Another form of the word "Oboe."

**Head-voice.** The higher register in boys' and women's voices, as opp. to "chest-voice."

**Hell** (*Ger.*). Clear, bright.

**Hochzeitsmarsch** (*Ger.*). A wedding-march.

**Hornpipe.** A dance of English origin. So called from the instrument at one time used to furnish the music.

**Hurry.** A piece of music used in a theatre for accompanying or leading up to a dramatic climax.

**Il** (*It.*), (*eel*). The.

**Il doppio movimento** (*It.*). Double time.

**Imitation.** The repetition of a given subject, on a different degree of the scale, or in a different part from that in which it first appears.

**Impressario** (*It.*), (*impre-sahr-io*). A conductor or manager of an opera or concert party.

**Impromptu.** A piece of music in the style of an improvisation.

**Improvisatore** (*It.*), (*improv-vees-sa-toray*). One who has the gift of improvising.

**In partito** (*It.*), (*in-part-teeto*). In score.

**Instrumentation.** The art of writing for the orchestra.

**Intermezzo** (*It.*), (*intermet-so*). A short movement coming between two of a more important character. A short piece played between the acts of a drama or opera.

**Interval.** The difference of pitch between one note and another—literally the space between them.

**Intoning.** Reciting words to musical notes in the Church Service.

**Intrada** (*It.*), (*intrâh-da*). Prelude; introduction.

**Introit.** A short anthem sung at the beginning of the Mass.

**Istesso tempo, l'** (*It.*), (*listes-so-tem-po*). The same time, or rate. Used for indicating that the *beat* is to have the same duration although the time signature has been changed.

**Jägerchor** (*Ger.*), (*Yaeger-kor*). Hunting-chorus.

**Jodl** (*Ger.*), (*Yod-el*). A manner of singing peculiar to the Swiss and Tyrolese, in which curious effects are produced by the rapid alternation of the natural and falsetto tones of the voice.

**Jota.** A Spanish dance.

**Kapellmeister.** See Capellmeister.

**Keeners.** Singers hired to lament at Irish funerals.

**Kettle-drums.** Drums of a caldron or *kettle* shape. The ordinary orchestral drums: used also in cavalry bands.

**Key.** A term somewhat loosely applied to scales and signatures. A piece having the signature of the scale of A major is said to be in the *key* of A major, and A is the *key-note* of the scale of A major.

**Khalil.** Hebrew flute or oboe.

**Kinnor.** One of the most ancient string instruments of the Hebrews.

**Kit.** A small violin used by dancing-masters.

**Klavierauszug** (*Ger.*), (*kla-veer-ows-tsoog*). A pianoforte score.

**Kraft** (*Ger.*). Vigour. *Mit kraft*, with vigour.

**Lacrimoso** (*It.*), (*lakri-moz-o*). Tearful.

**Lancers.** A form of square dance.

**Ländler** (*Ger.*), (*layndler*). A simple waltz-tune in moderate time: originally peculiar to South Germany and Austria.

**Langsam** (*Ger.*). Slow.

**Largamente** (*It.*), (*larg-a-men-tay*). Broadly.

**Larghetto** (*It.*), (*lar-get-to*). Rather broadly—rather slowly, but not quite so slow as Largo.

**Largo** (*It.*). Slow.

**Lead.** An entry or passage to be given out by one particular voice or instrument.

**Leading-note.** The seventh degree of the scale. So called because of its tendency to induce the ear to expect the tonic or key-note immediately afterwards.

**Lebhaft** (*Ger.*), (*layb-haft*). Lively.

**Legato** (*It.*), (*legaht-o*). Smooth.

**Leger lines.** Short lines drawn above or below the stave.

**Leggiere** (*It.*), (*ledjayr-ay*). Very lightly.

**Leggiero** (*I* ), (*ledjayr-o*). Light.

**Legno** (*It.*), (*layn-yo*). Wood.

**Leitmotiv** (*Ger.*), (*lite-moteev*). A theme typifying some person or feature in an opera.

**Lento** (*It.*). Slow.

**Libretto.** The book or text upon which an opera, oratorio, &c., is based.

**Lied** (*Ger.*), (*leed*). A song.

**Liedertafel** (*Ger.*), (*leeder-tafel*). A male choir.

**L'istesso** (*It.*), (*listes-so*). The same.

**Madrigal.** An unaccompanied vocal work, usually polyphonic in style.

**Maestoso** (*It.*), (*may-es-tos-o*). With dignity, grandly.

**Ma non troppo** (*It.*). "But not too much so."

**Marcato** (*It.*), (*mark-ah-to*). Marked; accented.

**Meno** (*It.*), (*mayn-o*). Less.

**Menuet.** Minuet.

**Mesto** (*It.*). Sad, pensive.

**Metronome.** An instrument for measuring the relative length or duration of notes in music.

**Mezzo** (*It.*), (*met-tso*). Half or medium. *Mezzo forte*, moderately loud. *Mezzo soprano*, a soprano voice of medium register; coming midway between pure soprano and alto.

**Minor.** Less, smaller. Intervals containing a semitone less than major intervals are called minor. A scale with a minor third and sixth is a minor scale.

**Minuet.** A dance in triple time, supposed to have originated in Poitou in the seventeenth century.

**Miserere.** The 51st Psalm.

**Misterioso** (*It.*), (*mis-ter-i-os-o*). Mysterious.

**Mit** (*Ger.*). With. *Mit Begleitung*—with accompaniment.

**Mode.** A scale; usually applied to the ancient ecclesiastical type of scale.

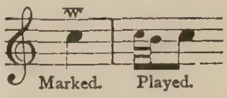
**Moderato** (*It.*), (*moderah-to*). Moderate.

**Modulation.** Change of key.

**Molto** (*It.*). Much, very; *Molto allegro*, very quick.

**Morceau** (*Fr.*), (*more-so*). A piece, usually short.

**Mordent.** A grace note



**Morendo** (*It.*), (*moren-do*). "Dying away."

**Mosso** (*It.*), (*mos-so*). Quick. *Più mosso*—quicker.

**Motet.** A composition for voices, generally on a sacred subject, and usually unaccompanied.

**Moto** (*It.*), (*mo-to*). Motion, movement.

**Movement.** A division of an extended composition, as *first movement, slow movement*, &c.

**Musette** (*Fr.*). A melody over a drone-bass, in imitation of a bagpipe tune.

**Nachtstück** (*Ger.*). Night-piece; nocturne; serenade.

**Nobile** (*It.*), (*nob-il-ay*). Noble.

**Nocturne.** A composition of a quiet, gentle character.

**Non** (*It.*). Not.

**O** (*It.*). Or.

**Obbligato.** An instrumental part or accompaniment of special importance.

**Oboe.** A wood-wind instrument with a double reed.

**Oboe d'amore.** A small oboe.

**Octave.** The interval of an eighth.

**Octet.** A composition for eight solo instruments.

**Opera.** A dramatic entertainment in which the dialogue and words generally are set to music, and the action of the piece is also accompanied and illustrated by music.

**Opus,** a work. (Abb. Op.)

**Oratorio.** A composition for voices and instruments based upon some sacred subject.

**Orchestra.** The place where the band, or band and chorus, are placed in a theatre or concert-room. The band itself.

**Overture.** The instrumental prelude to an opera, oratorio, &c. A "Concert Overture" is an independent composition constructed in the form of an overture.

**Parlando** (*It.*), (*parlan-do*). Declamatory.

**Partition** (*Fr.*)
**Partitur** (*Ger.*) } A full score.

**Part-song.** A choral composition for two or more "parts" or voices.

**Passacaglia** } (*It.*), { (*passakal-ya*)
**Passacaglio** } (*It.*), { (*passakal-yo*)
**Passecaille** (*Fr.*), (*pa-sa-kahee*)
} A ground bass, with variations. Originally a slow dance in $\frac{3}{4}$ time. (See also Chaconne.)

**Passing notes.** Notes which do not belong to the harmony accompanying them.

**Passionato** (*It.*). In an impassioned manner.

**Pastoral.** A simple piece usually in $\frac{6}{8}$ time in a rustic style. A work founded on incidents of country life.

**Ped.** Abbreviation of pedal. In pianoforte music an indication for the performer to press down the pedal which raises the dampers; inaccurately called the "loud" pedal.

**Pedal-point.** A long sustained note, usually in the bass.

**Perdendosi** (*It.*), (*per-den-do-si*). Diminution both of volume of tone and speed.

**Pezzi** (*It.*), (*ped-tsi*). Pieces.

**Phrase.** A musical sentence.

**Phrasing.** Musical punctuation; clear and intelligent treatment of a melody, both as a complete entity, and as a series of phrases or motives.

**Piacere, a** (*It.*), (*pee-ah-tchay-ray*).

**Piacevole** (*It.*), (*pee-ah-tchay-vol-ay*). Lightly, pleasantly.

**Pianissimo** (*It.*). Very soft, *pp*.

**Pianissississimo** (*It.*). As softly as possible, *ppp*.

**Piano** (*It.*). Softly, *p*.

**Pibroch** (*Gael.*). Literally pipe music. The martial music of the Scottish Highlands.

**Pitch.** The position of a sound according to the number of vibrations which produces it.

**Pitch-pipe.** A pipe for determining the pitch.

**Più** (*It.*). More. *Più allegro*—faster.

**Plain-song.** The most ancient species of Church music.

**Poco** (*It.*). A little. *Poco a poco*—little by little.

**Polacca** (*It.*), (*polak-ka*). Polish. A melody written in imitation of Polish dance-tunes.

**Polyphony.** Music in many parts.

**Pomposo** (*It.*), (*pom-po-zo*). Pompously.

**Postlude**
**Postludium** } (*Lat.*). A concluding voluntary.

**Prelude**
**Preludio** (*It.*),
**Preludium** (*Lat.*), } An introduction to a musical work or performance.

**Prestissimo** (*It.*). Very fast.

**Presto** (*It.*). Fast.

**Quartet**
**Quartett** (*Ger.*),
**Quartetto** (*It.*), } A four-part composition, vocal or instrumental; also a group of four soloists.

**Quick-step.** A quick march.

**Quintet.** A five-part composition; also a group of five soloists.

**Quodlibet.** A medley of various tunes; a *pot-pourri*.

**Rallentando** (*It.*). Becoming gradually slower.

**Ranz des vaches** (*Fr.*), (*rants da vash*). A tune played by Swiss herdsmen.

**Rebec.** A three-stringed instrument played with a bow. Of Arabian origin.

**Recitative.** Musical declamation.

**Reel.** A lively rustic dance.

**Refrain.** Chorus, or any passage recurring frequently.

**Rests.** Signs indicating durations of silence as notes indicate durations of sound.

**Rhapsody.** A composition in a free style; somewhat akin to the Fantasia.

**Rigadoon.** An old-fashioned dance.

**Ritard** }
**Ritenuto** } (*It.*). Holding back the pace.

**Ritornello** (*It.*). An interlude.

**Robusto** (*It.*). Strong, powerful.

**Rondo.** A composition in which the main theme occurs *at least* three times, the repetitions being separated by contrasting matter.

**Root.** The fundamental or ground-note of a chord.

**Roulade** (*Fr.*). A florid ornamental passage, usually vocal.

**Round.** A vocal composition in canon-form.

**Roundelay** } A poem, or song, in which certain
**Roundel** } lines are repeated at intervals.

**Rubato** (*It.*). Literally, "robbed." *Tempo rubato* is a breaking up of the regular time, so that one note receives more than its strict proportion of time, and another less.

**Run.** A rapid succession of notes. Generally applied to scale passages sung to one syllable.

**Sackbut.** A kind of harp, mentioned in the Bible. Old English sackbut, a kind of bass trumpet, with a slide like the trombone.

**Saltarello** (*It.*), (*salta-rel-lo*). A quick, springing dance, usually in $\frac{6}{8}$ time.

**Sans** (*Fr.*). Without.

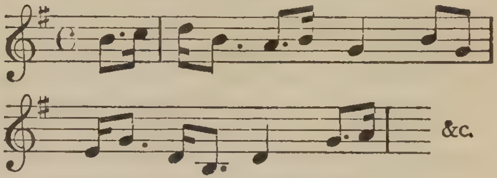
**Sax-horn.** A horn with pistons, invented by Adolphe Sax.

**Scenario** (*It.*). The plot of an opera or drama.

**Scherzo** (*It.*), (*skert-so*). An instrumental movement of a lively, playful character.

**Score.** A copy of a musical work in which all the parts are shown on separate staves.

**"Scotch snap."** A long unaccented note preceded by a short accented one, common in *Scotch* music, whence the name.



&c.

**Segno** (*It.*), (*sayn-yo*). The sign 𝄋 [*Al segno*].

**Segue** (*It.*), (*say-gue*). "Follows."

**Sehr** (*Ger.*). Very. *Sehr lebhaft*, very quick.

**Sempre** (*It.*), (*sem-pre*). Always.

**Senza** (*It.*), (*sent-sa*). Without.

**Septet.** A composition for seven voices or instruments.

**Serenade.** Originally something to be sung or played out of doors, and at night.

**Sforzando** } (*It.*), { (*sfort-san-do*) } Forcing.
**Sforzato** } { (*sfort-sa-to*) }

**Shake.** Quick alternations of a principal note with that a tone or semitone higher.

**Slur.** The curved line ⌒ used to indicate phrasing, legato, and also bowing in string music.

**Sonata.** An instrumental composition in several movements; a work played, as distinct from one sung (*cantata*).

**Sonatina.** A little sonata.

**Sordino** (*It.*). A mute.

**Sostenuto** (*It.*), (*sos-ten-oot-o*). Sustained.

**Ständchen** (*Ger.*), (*stend-tchen*). A serenade.

**Stave.** The group of lines upon which music is written.

**Stretto** (*It.*). Contracted; in a fugue, a section near the close, wherein the subject and answer are combined more closely than hitherto.

**Suspension.** The prolongation of a note belonging to one chord into another, and often forming a discord.

**Symphonic.** After the manner of a symphony.

**Symphony.** A composition on a large scale for orchestra. Written more or less in the form of a Sonata.

**Syncopation.** A series of cross accents.

**Tacet** (*Lat.*). Literally, "It is silent."—A direction enjoining silence.

**Tedesca, alla** (*It.*), (*ted-eska*). In the German style.

**Tema** (*It.*), (*tay-ma*). Theme; subject.

**Tempo** (*It.*). Time or measure. *Tempo Primo*—First time.

**Tenor.** The highest male chest voice; also the viola.

**Tenuto** (*It.*), (*ten-ooto*). Held; sustained.

**Thorough-bass.** Figured bass.

**Tie.** A curved line ⌒ placed over two or more notes to show that they are to be played as one.

**Tranquillo** (*It.*), (*tran-kuil-lo*). Tranquil.

**Transcription.** Rewriting a composition for instrument or voices other than the original ones.

**Transposing Instruments.** Instruments which produce other than the exact notes written for them. The B♭ clarinet, on which the *written* note C *sounds* B♭, is a transposing instrument.

**Tremolo** (*It.*). Trembling. A shake.

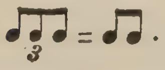
**Triad.** A chord of three notes.

**Trichord.** Having three, or triple, strings.

**Trill.** A shake.

**Trio.** A composition for *three* voices or instruments. The second part of a minuet, march, &c., said to have been originally written in three parts or for three instruments—hence the name.

**Triplet.** A group of three notes performed in the time of two of the same kind, thus



**Trombone.** A large brass instrument, in which the pitch is varied by means of a slide.

**Una corda** (*It.*). With the soft pedal.

**Ungarisch** (*Ger.*), (*un-garish*). Hungarian.

**Valse** (*Fr.*). Waltz.

**Variationen** (*Ger.*),
**Variazioni** (*It.*),
**Variations**
Modifications of time, tune, and harmony, of a theme originally set forth in a simple form.

**Veloce** (*It.*), (*ve-lo-che*). Swift.

**Ventil** (*Ger.*). A valve. ***Ventil-horn***, valve-horn.

**Vigore, con** (*It.*), (*con-vig-or-e*). With vigour.

**Vilanella** (*It.*). A rustic dance of a lively character, accompanied with singing.

**Viol.** An old-time stringed instrument, the forerunner of the violin.

**Virtuoso** (*It.*). An especially skilled performer on some instrument.

**Vivace** (*It.*), (*viva-che*). Lively, vivacious.

**Vivo** (*It.*), (*vee-vo*). Brisk.

**Volkslied** (*Ger.*). Folk-song.

**Volta** (*It.*). Turn, or time. *Una volta*—once. *Prima volta*—first time; also an old dance.

**Volti** (*It.*). Turn. *Volti subito*—turn quickly.

**Vorspiel** (*Ger.*). Prelude.

**Waits.** Bands of singers and players who perform carols at night in the streets of English towns about Christmas-time.

**Waltz.** A dance in triple time supposed to have originated in Bohemia.

**Wehmuth** (*Ger.*). Sadness.

**Xylophone.** A musical instrument composed of a graduated series of blocks of resonant wood. It is played with two small hammers.

**Zart** (*Ger.*). Soft, delicate.

**Zingaresca.** A gipsy song or dance.

## ABBREVIATIONS.

*A.* Alto.
*Accel.* Accelerando.
*Ad. lib.* Ad libitum.
*B.* Bass.
*Brill.* Brillante.
*Cad.* Cadenza.
*Cal.* Calando.
*Con esp.* Con espressione
*Cres., cresc.* Crescendo.
*D. C.* Da Capo.
*Decres.* Decrescendo.
*Dim.* Diminuendo.
*D. S.* Dal Segno.
*Espres.* Espressivo.
*f.* Forte.
*ff.* Fortissimo.
*F. O.* Full organ.
*G.* or *Gt. O.* Great organ.
*fz.* Forzato.
*Intro.* Introduction.
*Leg.* Legato.
*M.* Manual.
*Mag.* Maggiore.
*Marc.* Marcato.
*mf.* Mezzo-forte.
*M. M.* Maelzel's Metronome.
*Mor.* Morendo.
*p.* Piano.
*Ped.* Pedal.
*Perd.* Perdendosi.
*P.F.* Pianoforte.
*p. f.* Più forte.
*Pizz.* Pizzicato.
*p.p.* Pianissimo.

| | |
|---|---|
| *Rall.* | Rallentando. |
| *Recit.* | Recitative. |
| *Rit.* | Ritenuto. |
| *Ritard.* | Ritardando. |
| *S.* | Senza. |
| *Scherz.* | Scherzando. |
| *Semp.* | Sempre. |
| *Smorz.* | Smorzando. |
| *Sost.* | Sostenuto. |
| *Stacc.* | Staccato. |
| *Sw.* | Swell organ. |
| *Temp.* | Tempo. |
| *Ten.* | Tenuto. |
| *tr.* | Trill. |
| *Trem.* | Tremolando. |
| *Unis.* | Unison. |
| *Var.* | Variation. |
| *Viv.* | Vivace. |
| *V. S.* | Volti subito. |
| *Ima.* | Prima. |
| 8*va.* | Octave. |

## THE ENGLISH NAMES FOR NOTES.

WITH THEIR FRENCH, GERMAN, AND ITALIAN EQUIVALENTS:—

| ENGLISH | ITALIAN. | FRENCH. | GERMAN. |
|---|---|---|---|
| C. | Do. | Ut. | C. |
| C flat. | Do bemolle. | Ut bémol. | Ces. |
| C sharp. | Do diesis. | Ut dièse. | Cis. |
| D. | Re. | Re. | D. |
| D flat. | Re bemolle. | Re bémol. | Des. |
| D sharp. | Re diesis. | Re dièse. | Dis. |
| E. | Mi. | Mi. | E. |
| E flat. | Mi bemolle. | Mi bémol. | Es. |
| E sharp. | Mi diesis. | Mi dièse. | Eis. |
| F. | Fa. | Fa. | F. |
| F flat. | Fa bemolle. | Fa bémol. | Fes. |
| F sharp. | Fa diesis. | Fa dièse. | Fis. |
| G. | Sol. | Sol. | G. |
| G flat. | Sol bemolle. | Sol bémol. | Ges. |
| G sharp. | Sol diesis. | Sol dièse. | Gis. |
| A. | La. | La. | A. |
| A flat. | La bemolle. | La bémol. | As. |
| A sharp. | La diesis. | La dièse. | Ais. |
| B. | Si. | Si. | H. |
| B flat. | Si bemolle. | Si bémol. | B. |
| B sharp. | Si diesis. | Si dièse. | His. |

## CHAPTER III

# THE PIANOFORTE

### INTRODUCTION.

In pianoforte technique we are concerned with the intricate workings of that complicated machine the human body, with the very intricate workings of that still more complicated machine the human mind, and with the detailed workings of the actual mechanism of the pianoforte itself.

Unless all these factors are taken into account, success in pianoforte-playing must be largely accidental, the result of some peculiar instinct on the part of the performer for doing the right thing, physiologically, mentally, and mechanically. The normal person who may be possessed of musical instinct, but who is not a physiological genius, cannot thus rely upon instinct, but will need careful study and regular work.

In these days, however, when much is known about the workings of the mind and the body, to say nothing of the pianoforte itself, an adequate pianoforte technique—which is the ability to express what we want to express, artistically—is within the reach of nearly everyone.

It is of course obvious that the ability to interpret—to create art out of musical sounds—is largely a gift, a gift which naturally needs a certain amount of training, and which is, like other gifts, capable of development to a greater or lesser extent according to the individual. Technique, on the other hand, is largely a question of detailed application, of knowing what we have to do with our bodies to produce the right effects, and of practising the necessary actions and conditions until we can perform them automatically.

The training and development of artistic instincts are largely outside the scope of a chapter such as this. It is a somewhat lengthy process, and will depend not only upon a wide study of music, but also upon the gradual development of the personality and the life experience of the individual. We can and shall, however, endeavour to discuss as many aspects as possible of the technical means by which may be developed whatever artistic ideas the individual may possess.

### THE TWO FUNDAMENTAL TOUCHES OR TOUCH-FORMS.

#### The Classification of Piano Passages.

Pianoforte passages may be divided broadly into two main types. The first of these consists of chords, intervals, and *isolated* or *detached* single notes. The second consists of *connected* or *legato* single notes. The main difference between these types, as far as technique is concerned, is that the playing of the former necessitates some form of arm movements, whilst the playing of the latter demands finger movements. Let us examine this point in greater detail, as the distinction is important.

Supposing we wish to play a chord. It is quite clear that the one way we should *not* play it (if we obeyed any sort of natural instincts) would be by placing our hands and fingers over the keyboard and making isolated upward and downward finger movements from the knuckle joints, keeping the hand and arm stationary. We should, on the contrary, make some form of arm movement, a movement of the hand at the wrist joint, a movement of the forearm at the elbow joint, or a movement of the whole arm at the shoulder. To make isolated finger movements would not only be extremely difficult, but probably entirely ineffective.

On the other hand, a series of connected single notes (such as a portion of a scale) seems quite naturally to demand the independent movements of one finger after another, such movements taking place from the knuckle joints.

Thus we see that in pianoforte music one main type of passage demands arm movements of some kind, and the other type demands finger movements. It is most essential that this distinction should be realised as a conscious mental process. We shall commence our study of technique by considering the most effective means of playing passages of the first type—namely, chords, intervals, and isolated or detached single notes.

### Arm Touch before Finger Touch.

In days gone by, it was usual for the student to commence his technical studies with some form of five-finger exercise, but a little thought will show that this is not the best means towards the end. In the first place, it is obvious that in learning anything, it is wise to begin with the easy and work towards the difficult. Now, we are in general much more accustomed to making arm movements than individual and isolated movements of our fingers. We have, in fact, from our earliest days been learning some degree of control of our arm movements, whereas in no single occupation in life, other than the playing of a musical instrument, are isolated finger movements required. You may possibly think that this is a somewhat exaggerated statement, but if you consider the matter carefully, you will realise that the controlled use of one finger, moving upwards and downwards at the knuckle, followed in turn by the use of any other finger in the same way (without any movement of the arm to correspond with the finger movements) is never required in everyday life. Indeed, one might almost go so far as to say that the use of the fingers in pianoforte technique is one of the most difficult of all physiological co-ordinations. The arrangements and plan of the finger muscles indicate clearly that nature does not really intend us to use our fingers separately, but, on the contrary, in groups for the one essential-to-life purpose, namely, for the act of grasping. For this action we have a definitely inherited instinct, but the finger technique used in piano playing is an entirely artificial habit, for which we have in general no hereditary aptitude.

Secondly, the finger movements necessary for finger technique are controlled by extremely complex muscular processes, and there is ample scope for many undesirable muscular co-ordinations, which, if they do occur, render technique of this kind more difficult than it actually need be. Indeed, the student who attempts finger technique without knowing exactly what is the best way of setting about it, is almost certain to use not only his fingers, but also his arms, quite wrongly, and may thus continue indefinitely struggling against himself! This process involves not only a tragic waste of time, but may also in many cases cause definite harm to the muscular system in the shape of neuritis, pianist's cramp, and kindred ailments.

Arm movements, however, belong to quite a different category. To begin with, the muscular processes which control them are decidedly less complicated, and when it is realised that the control of at least two arm movements (the push out of the arm in self-defence, and the lifting of the arm towards the mouth) are definitely hereditary instincts, and probably the most strongly inherited of all physical movements, it will be clearly seen that everything is in favour of commencing the study of pianoforte technique with arm movements, and not with finger movements.

Moreover, it is not sufficiently realised that whilst effective arm movements have little connection with the state or condition of the fingers, effective finger movements are definitely linked up with certain specific states or conditions of the arm. Thus we could, for example, make perfectly controlled and effective arm movements without bothering in the slightest degree about our fingers, but we cannot make effective or controlled finger movements without managing our arms correctly.

It should now be realised that we are able to make many different kinds of arm movements. We can, for example, move our arm forwards, backwards, sideways, upwards, and downwards. We can also rotate it at the shoulder joint; in fact, we can make it move in any plane we wish. Our next consideration will therefore be to decide which is the most effective of these many possible arm movements for the object we have in view.

The pianoforte keys move upwards and downwards, and it has been the habit of teachers in the past to assume that the most efficient movements which the human body can make for the purpose of moving the keys down, are movements which are themselves directly downwards. These, however, are not the movements which give the player the greatest possibility of control. I use my arm, not upwards and downwards, but forwards and backwards, and play all, or very nearly all, my chords, intervals, and isolated single notes, not by means of any purely downwards movement, but by a forward push of the whole arm, keeping the movement as flat as possible. Actually, what happens is that the upper arm is moved forward and the forearm simultaneously moved slightly downwards. The movement is best conceived as a definite push, and its main scope forwards and backwards, not upwards and downwards. This movement is so contrary to generally accepted views that it will be advisable to explain my reasons for it before proceeding further. I will therefore tabulate those reasons, and then discuss each one a little more fully.

(1) This one touch (" Whole-arm push ") can take the place of all the older whole-arm, fore-arm, and hand (wrist) touches.

(2) Physically it is easier to use the arm in this way, than to move it upwards and downwards.

(3) This touch gives a greater measure of tone control and produces a wider range of tonal intensities.

(4) When mastered, there remains only Finger touch to be acquired, and thus a complete technique can be obtained by means of two touches—one Arm touch and one Finger touch.

This is surely a convincing set of reasons for the adoption of this type of arm movement, provided that these reasons can be proved to be true. I will therefore endeavour to convince you that they are correct, by discussing each of them in a little more detail.

(1) With the older types of arm touches, the whole arm is used upwards and downwards for *fortissimo* chord and interval passages, and this touch works perfectly well provided (*a*) that a big tone is required and (*b*) that the passage is moving fairly slowly. If, however, the chords or intervals are moving at more than a moderate speed, the whole arm-touch becomes so clumsy as to be useless, and a smaller portion of the arm—namely, the forearm—has to be used instead. There are, however, passages in which chords and intervals follow one another in such rapid succession that even a forearm touch will not play them satisfactorily, and then a still smaller portion of the arm—namely, the hand working at the wrist joint—has to be used. Thus we have, at the very least, three touches to learn for fundamentally similar types of passages. The employment of these three touches is thus regulated and governed by the *speed* of the passage, and the student is constantly having to " change gear " according to the speed, in exactly the same way as motorists have to change gear according to their car speed and the degree of the steepness of the hills they encounter.

You may reasonably remark here that it is not a very difficult matter to learn and use three touches, and I agree, provided that these three touches work satisfactorily. But do they? It is true that they enable us to tackle similar passages of varying speeds, but (and it is a very big " but ") every time a smaller portion of the arm is used—that is, every time we change from a whole-arm touch to a forearm touch, or from a forearm touch to a hand touch, we gain in speed ***but we lose in power.*** It must be clear to everyone that the same strength cannot be obtained by the hand working at the wrist joint as can be obtained by the whole arm working at the shoulder joint. Thus, under the technique which most of us, myself included, have been trained, speed and power are mutually antagonistic; or, in more simple language, the faster you play, the less tone you are able to obtain! This point seems so obvious that it is a wonder it has not been considered before. Indeed, it may have been, but until quite recently no solution has been offered for overcoming the difficulty. You can easily test the matter for yourself by playing a series of repeated chords, *fortissimo*. Start by playing the chords so slowly that you can obtain the maximum tone of which you, as a pianist, are capable. Now gradually increase the speed until you are playing approximately five chords to the second. You will find that as you increase the speed, *i.e.* as you change from whole-arm to forearm, and from forearm to hand touch, your tone will inevitably decrease, and that the endeavour to obtain a real *fortissimo* in the very quickly moving chords will probably produce a feeling of strain in the hand, wrist, and forearm. The system of using the whole arm to and fro, and keeping the movement as flat as possible, will, on the contrary enable you to use the whole arm for all speeds, without incurring loss of power.

The reason for this difference is that if you move your arm in a largely horizontal plane as I have suggested, its weight never has to be lifted, and it is, in fact, the lifting of the whole weight of the arm *against gravity* between each chord which prevents the whole arm being used efficiently at any great speed. In other words, it is not the downward movement actually used in playing chords and intervals which is so much at fault, but rather the reverse movement (the upward one) incurred in coming up from the keyboard in order to get into position for the next downward movement. Under the system which I am advocating, the reverse movement (bringing the arm back) is as easy as the main one (pushing it forward), and indeed this whole movement is particularly easy to produce, to control at any desired speed, and to continue for long periods of time without undue fatigue.

(2) You can easily prove that it is easier physical work to use the arm in this way by a very simple experiment. Raise the whole arm upwards and downwards from the shoulder joint as fast as you can. Make the movement fairly large. Try to estimate in your mind how much energy this has taken, and then push the whole arm vigorously to and fro, as if you were sawing a piece of wood. You cannot fail to notice that the energy required for this latter type of movement is considerably less than for the former.

(3) Control of tone is largely a question of control of arm speed. Now, it is very much easier to control the speed of any limb when it is unhampered by an external influence such as gravity. When the arm comes downwards (as in the older touches), it is all the time being acted upon by the force of gravity, and so we are often obliged to " put the brakes on," in order to prevent it from moving downwards too fast. Everyone knows the difficulty of playing really *pianissimo* with any degree of certainty, and this is one of the main causes of the difficulty. You will easily see what I mean if you consider whether you have more control over the speed at which you wish to walk when you are walking on the level or when you are walking down a steep hill! When you are walking on level ground you have very few external forces influencing your speed, but when you are walking down a steep hill you have the very big force of gravity *continuously* trying to make you move faster and faster *all the time*. It is just the same in all downward arm movements.

(4) That this movement produces a wider range of tone intensities can be illustrated in a very few words. A softer *pianissimo* is more easily obtainable, and with greater control with regard to the exact degree of tone required, because the force of gravity is not constantly pulling the arm downwards, and hence it can be moved more slowly and with greater control. A louder *fortissimo* can also be obtained because, when the arm is moved forwards, the weight and energy of the body can be linked up with those of the arm, and more power, and hence more tone, is possible.

You will, I think, if you free your mind from any prejudice, see from the first of these explanations that it is possible to obtain by one touch, and one only, all those effects which have hitherto been obtainable only by employing at least three touches (whole-arm, forearm, and hand). By this one touch you can, and should, play the great majority of chord and interval passages (together with *staccato* single note passages) whether *lento* or *prestissimo*, whether *pianissimo* or *fortissimo*.

There is only one other main type of pianoforte passage, and that is the *legato* " scale-arpeggio " type, which obviously requires a finger touch. Thus, all technique is really obtainable by two touches, one arm touch, and one finger touch. The simplicity of this is obvious. It is also obvious that the more simple we can make the learning of technique the quicker and better shall we learn it. The system I have been describing is so simple that it enables you to think out for yourself which movements (arm or finger) should be used, and thus the foundation for technical analysis. so important in the later development of technique, is surely laid.

### Preliminary Exercises for Correct Arm Technique.

A wise teacher of the last century once said that the first thing to do with the arm was to learn to relax it, and that the next was to learn to stiffen any joint at will whilst leaving the others relaxed. A great deal of the lack of vitality in the playing of present-day students is due to the fact that they have carried the principles of relaxation too far.

I shall endeavour to make this clear a little later. As it is, however, quite certain that it is impossible to play the piano well, or indeed to make any proper headway at all, until relaxation has been learnt, the first actual exercises for the student are connected with relaxation.

For this and certain other exercises described in this chapter you really require the help of some other person until you have mastered them. Anyone who is willing to give you a few minutes at frequent intervals will do admirably, and your helper need possess no musical knowledge whatever.

### For Learning to Relax the Whole Arm at the Shoulder Joint.

EXERCISE 1.

Your helper should raise the whole of your arm to shoulder height and support it in that position for a few moments. For your part, you have nothing particularly difficult to do. All you have to do is to let your arm go slack—to let it be entirely limp and free, and to use the support with which your helper is providing you as a resting-place for the weight of your arm, in very much the same way as you make use of the arms of a chair when you are sitting really comfortably. When you think you have acquired this condition, your helper should, *without giving you any warning*, suddenly withdraw the support. Your arm should now immediately fall limply back to your side again. The object of this exercise is to teach you to recognise the particular sensations which are in operation in connection with your arm when the former is resting properly on some solid support. In pianoforte playing you will nearly always require this absolute freedom at the shoulder joint, and the only way in which you can be certain that you can produce this condition at will when you are playing, is by regularly practising, in order to obtain the same condition away from the keyboard. You should notice, and try to remember, all the accompanying sensations, and then reproduce them at frequent intervals, until the knack of getting your arm and shoulder into this condition is just as easy as the many other muscular tricks which we have to do every day of our lives.

EXERCISE 2.

When you are reasonably sure that you can obtain the above condition at will, and with no rea effort, you have then to realise the difference between these sensations and those which accompany a different condition of the arm. This condition is when your arm is held up, *not* by means of an *external support*, but by means of your own muscles. Commence as in Exercise 1. Let your arm go limp on the support, and then imagine that the support is going to be withdrawn. This time, however, you are not going to allow your arm to fall, but are going to keep it in the raised position, even when there is no longer any external support for it. Prepare to do this, and then let your helper withdraw the support. You should notice immediately that when you are holding your arms up by means of your own muscles the accompanying sensations (particularly those in the upper arm and shoulder region) are entirely different. It is of the utmost importance that you should be able to obtain from your body either of these conditions at will, and to be able to change rapidly from one to the other. The former condition we shall, for the purpose of convenience, call the " Resting Arm," and the latter the " Self-Supported Arm." You will understand that at this stage, when your arm is in its resting condition, it is exerting a force, owing to its weight, upon whatever object is supporting it, and that when it is in the self-supported condition, this weight is no longer effective. It is not necessary to worry about this at the present stage, but the idea is introduced here in preparation for its consideration and discussion later.

EXERCISE 3.

Commence as in Exercise 1, and count slowly 1, 2, 3, 4, etc., allowing the space of about four seconds between each count, and, on the point of each count, change from the " self-supported arm " to the " resting arm " condition, performing these changes regularly and rhythmically. Gradually increase the speed of the counting process until you change the condition approximately every second.

### For Learning to Relax and Support the Forearm at the Elbow Joint.

EXERCISE 4.

Exercises 1, 2, and 3 are now repeated, with the difference that in this case the upper arm hangs freely and perpendicularly downwards from the shoulder joint, and your helper now supports your *forearm* at a point just behind the wrist. In this exercise you learn to bring into operation either the " resting " *forearm* or the " self-supported " forearm, and acquire the ability to change from one condition to the other at will.

N.B.—It is important in all the above exercises that, when the object is to acquire the " resting arm " condition, your helper should not give you the slightest indication as to when the support is going to be withdrawn. Indeed, it is better to be looking away, so that you have no idea as to when this is going to take place. It is important also that your arm, when the support is withdrawn, should fall naturally and loosely downwards, and should not be *pushed* downwards by means of a *conscious* and *definitely muscular* effort.

### For Acquiring the Correct Push and Pull Movement of the Arm for Arm Technique.

EXERCISE 5.

Adopt a sitting position, rest the palm of your right hand on your right leg just above the knee, and then place a pencil under the hand. Now roll the pencil to and fro along your leg. (See Fig. 1.) This is quite easy. It is merely a push and pull of the arm directly backwards and forwards, the hand always being kept in contact with the pencil. You should think primarily

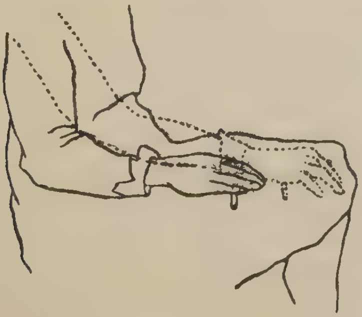


FIG. 1.

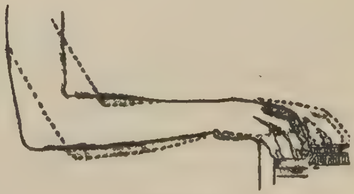
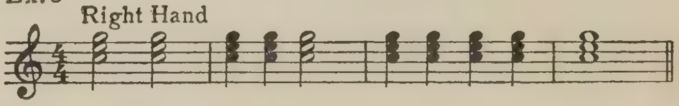


FIG. 2.

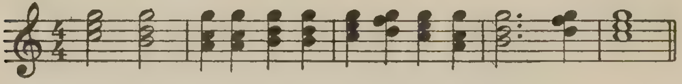
about the forward movement and allow the backward movement to happen automatically as a kind of reflex action. The movements should be performed regularly and rhythmically, and the speed should be varied from quite slow to as fast as possible. Notice that as the speed increases, the size of the movements decreases. The same exercise should also be practised with the left arm. This movement is almost exactly similar to the one which should be used in playing nearly all chords, intervals, and isolated single notes, and the exercise is particularly valuable because it is foolproof. It will give you a very good understanding of the way in which you should use your arm when playing any of the above passages. (See Fig. 2.) I will now explain how this movement should be applied to the keyboard.

The obvious means of applying this type of arm movement to the keyboard is by the practice of simple intervals and chords. Take simple chord passages and play them at various speeds. See Exercises 6 to 8.

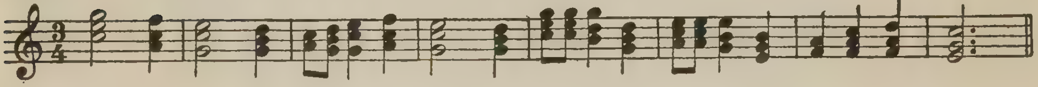
Ex.6



Ex.7



Ex.8



Each chord should be played by means of the push forward of the whole arm which I have described above. Similar exercises should also be practised for the left arm. At this stage the tone should be *forte*. This allows fairly ample and vigorous movements for each chord or interval. The speed should be slow to start with, and should later be increased. The student should also invent similar exercises or practise short pieces containing principally chord passages.

The upper arm, of course, has to be drawn slightly backwards in between each chord and the forearm slightly raised, in order to get into position again for subsequent chords (see Figs. 3 and 4). The actual movements of the arm need not be large, and the fingers should not slide along the keys after they have been depressed if the chords are being played fast or loudly. For soft and slow chord passages a slide along the keys is not undesirable. The shoulder joint, from which the movement originates, should be kept as free as possible, in order that the upper arm may perform its forward and backward movements easily, *and the wrist, knuckle, and finger joints must be kept firm.* This firmness is of great importance; if firmness is lacking at this point the joints will

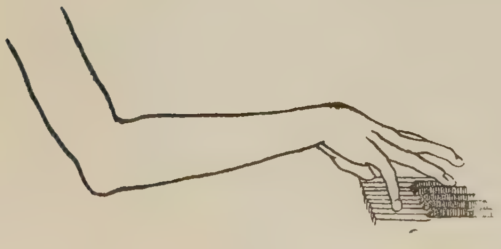


FIG. 3.

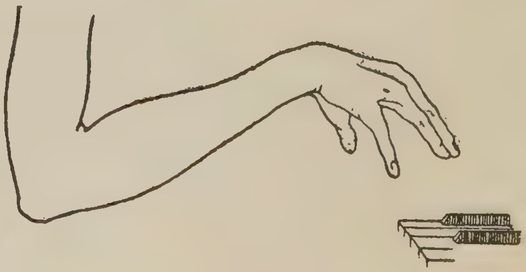


FIG. 4.

collapse after the finger-tips meet the keys, and the tone will most certainly be uncontrolled, and very probably of poor or indifferent quality. This condition of firmness is another condition * which has to be learned for the purpose of pianoforte technique. We shall here first attempt to master it in connection with the wrist joint.

EXERCISE 9.

Place your hand in such a position that the back of the hand is approximately on a level with the forearm. (See Fig. 5.) Now imagine that someone is trying to move your hand quickly upwards and downwards at the wrist joint, and imagine that you are trying very hard to resist these movements. You will notice that there is an increase of tension around the neighbourhood of the wrist joint which may extend towards the fingers in one direction and towards the shoulders in the other. When the wrist is in this condition you can actually test for its correctness by asking someone to move your hand at the wrist joint. After you have acquired the necessary firmness, let the tension go so that your hand falls freely. Repeat regularly until the state of firmness can be acquired instantly and with no effort or difficulty.

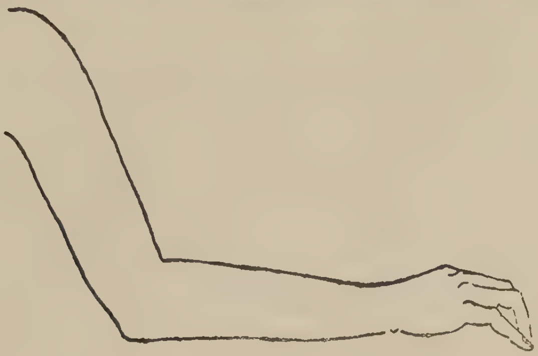


FIG. 5.

### For Acquiring Firmness at the Knuckle and Finger Joints.

EXERCISE 10.

Adopt a sitting position with the fingers slightly curved, the knuckles fairly high, and rest the hand on the top of the leg. (See Fig. 6.) The fingers, hand, and forearm should be as relaxed (*i.e.*, free from tension) as possible. Now gradually press more and more firmly and vigorously downwards, taking care that neither the wrist, knuckle, nor any of the finger joints collapses. You will now notice a considerable feeling of tension in the fingers, hands, and arms. When there is a fair degree of tension, lift the hand and forearm away from your leg, keeping the condition of tension at the wrist, knuckle, and finger joints the same. Notice the sensations accompanying this tension. Drop your arm to the side. Let the tension go completely; rest for a few seconds and then repeat. This state of firmness at the wrist, knuckle, and finger joints should always be in operation just before the finger-tips reach the key (or, if you start from the surface level of the keys, just before you start to move the key downwards) and until the key is fully depressed. One of the difficulties that you may encounter in this respect is that you may not at first be able to confine this firmness to the particular joints specified, but may find your elbow and shoulder stiffening as well. This is possibly the first *really* difficult co-ordination that I have asked you to practise—namely, the co-ordination of firmness in one part of the arm, and suppleness and freedom in another. Here is an exercise which will help you in this respect.

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* You will notice that I use the word " condition " frequently. I use it to denote a " state " as opposed to a movement, and you will realise from the study of Exercises 1 and 2 that it is possible for your arm to be in definite states without any outward and visible signs of this difference.

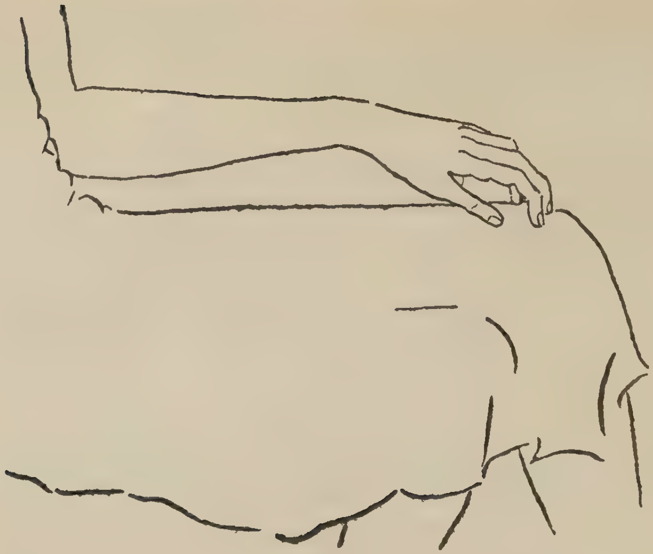


FIG. 6.

EXERCISE 11.

Obtain a small solid rubber ball of the type sold for puppies to play with. Place it in the palm of the hand and hold it there firmly and somewhat tightly by means of the cup-like hollow formed by the hand. (See Fig. 7.) Now place the forearm in the normal piano-playing position, and whilst still keeping the ball held tightly in the hand, notice the general shape of the fingers, hands, and knuckles. This is approximately the correct hand formation for use with arm technique. Notice the high arch of the knuckles, the somewhat straight fingers, and the feeling of firmness in the knuckles across the back of the hand.

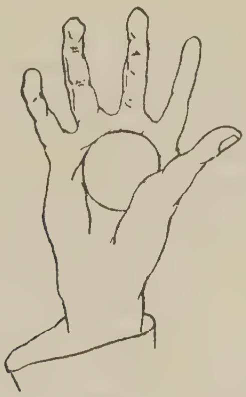
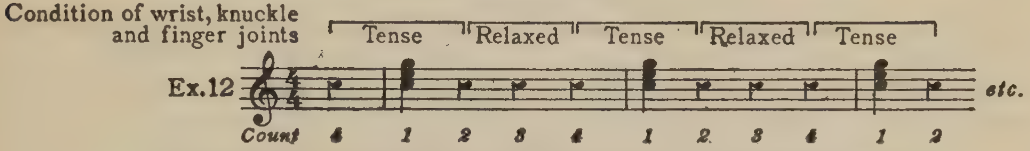


FIG. 7.

Now, whilst still holding the ball tightly, move the forearm freely at the elbow joint and the whole arm at the shoulder joint in all directions. You will find that after a very little practice you will be able to obtain perfectly free and easy movements at both the shoulder and the elbow, whilst keeping at the same time the necessary firmness at the wrist, knuckles, and fingers. An excellent method of practice for this exercise is to hold the ball in this way whilst walking, in which circumstances the normal easy swing of the arm at the shoulder will, in all probability, come naturally into action.

You will readily understand that any prolonged condition of tension or firmness at any joints must lead eventually to tiredness, and since this firmness is required only just before and during key descent, we must now learn both to acquire the tension at the correct moment and to let it go when it is no longer necessary. The latter condition should not come into operation until *after* the key is fully depressed and the sound required has been produced. Here is an exercise * which will help you to acquire the necessary "timing" with regard to the firmness and the subsequent relaxation in connection with a series of repeated chords.

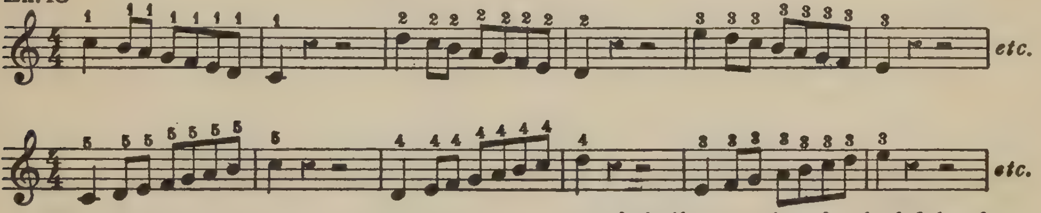
Ex.12


Condition of wrist, knuckle and finger joints
Tense
Relaxed
Tense
Relaxed
Tense
etc.
Count 4 1 2 3 4 1 2 3 4 1 2

and similar exercises for the left hand and also for both hands together.

The next exercise consists in playing white-note scales by means of one finger at a time. Each note should be played with a flat push of the arm, the finger and wrist being held firmly and the shoulder and elbow working perfectly freely. Start with the thumb, play a complete octave, then use the first finger, and so on. The thumb or finger (and the arm in conjunction with it) should rise only just far enough, whilst coming backwards, to get into position for playing the next note. The exercises below suggest a suitable rhythmic pattern and a plan for fingering scales of this type. Start by playing these exercises quite slowly, and gradually increase until the fastest possible speeds are attained.

Ex.13

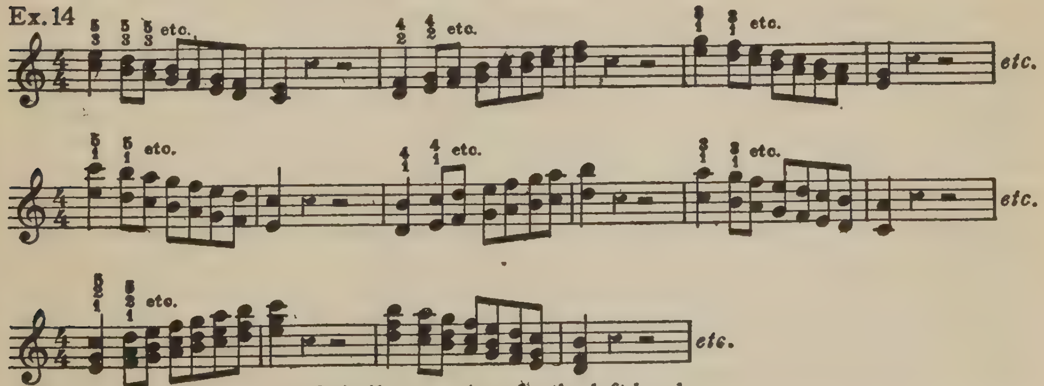


and similar exercises for the left hand.

The next stage is to apply the same arm movements to scales in thirds and sixths, and also to chords.

The examples below show some suggested exercises.

Ex.14



and similar exercises for the left hand.

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* I would again emphasise the point that in performing these and all the other exercises in connection with chords, intervals, etc., it is important to avoid, as far as possible, all directly upward and downward movements. Try always to make the movements as flat as possible.

Remember that when you play *fast* the finger and knuckle joints must, together with the wrist, *be kept tense for the duration of the passage.* Relaxation at the joints can then occur only between the performance of the complete passage. In the early stages it will be advisable to withdraw the arm from the keyboard between the exercises, in order that complete freedom may be obtained. Do not forget also to get the tension into operation again *before* playing the first note of the *next* exercise.

### The Correct Sitting Position.

The correct sitting position is of supreme importance, because it materially affects the ease with which all pianoforte movements are carried out. Under this system of technique the player should sit rather nearer to the instrument than is customary. The angle between the upper arm and the forearm should be approximately a right angle. This is the normal playing position, although in the playing of *fortissimo* chords, intervals, etc., it will be found advantageous temporarily to lean very slightly backwards from the waist, thus increasing the angle between the upper arm and the forearm. The forearm should be approximately horizontal and on a level with the white keys. See Fig. 8 for the approximate sitting position. Those who are accustomed to sitting farther away from the instrument than I have indicated, may find this position rather cramped at first. After a very short time, however, a considerable increase in physical ease and technical facility will result. The correct sitting position is so necessary that every effort should be made to acquire it.

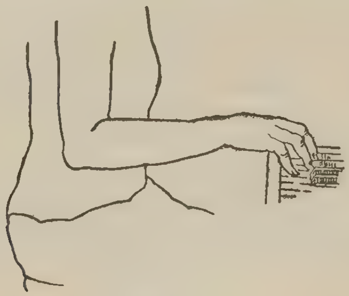

FIG. 8.

### Muscular Development.

All piano-playing is muscular work. We can make no controlled movement of any limb without muscular activity. The majority of piano students are muscularly unequipped to obtain the results for which they strive so hard. Anyone who has heard really first-class piano-playing will realise that the artist must possess well-developed as well as beautifully supple muscles, and yet teachers and students are still doing little or nothing in connection with this important question. They expect results from bodies totally unable to give these results, no matter how much time and labour is spent in trying to obtain them. Engineers are more sensible; they do not expect a baby car to haul a train! A properly developed muscular system saves years of practice, and brings to the student, at any rate, the possibilities of a technique which would otherwise be completely out of reach. Part of the work of every student must be engineer's work—the gradual building up of the physical system to meet the demands which good pianoforte technique imposes. There is only one sensible way to do this, and that is by practising gymnastic exercises. It is a far more scientific and a far quicker method than that of trying to obtain correct muscular development through keyboard practice. You may of course argue that physical exercises are dull. Actually it is nothing like such dull work to do physical exercises for a few minutes each day as it is to spend, not minutes, but hours a week practising technical passages. The majority of these need little if indeed any practice, provided that the student has the necessary muscular equipment and knows how to use it.

I will commence by telling you that one of the important muscles which helps to control that movement of the arm which we have been discussing (the forward push) is situated not (as you might expect) in the arm, but in the wall of the chest just underneath the shoulder. Note the position marked X in Fig. 9. This fact may come as a surprise to many, but it is true to say that the whole arm movement used in piano-playing is controlled to a large extent by this muscle, and others situated in the body, and not in the arm. The muscle I am describing is called the pectoral muscle, although really its name does not matter very much. It is one of the muscles which Nature gives for self-protection—one of the boxer's muscles. In the case of piano-playing it is one of the real tone-producing muscles for arm technique, and unless it is reasonably well developed, neither a really loud nor a properly controlled tone is possible.

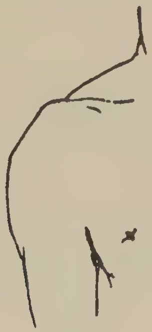

FIG. 9.

EXERCISE 15.

Here is an exercise for developing the pectoral muscle. Lightly clench the right fist, raise the arm as shown in Fig. 10, and then drive the fist vigorously in the direction of the left knee. Repeat six to eight times. For some little time the fingers of the left hand should be placed under the right shoulder in the position of the pectoral muscle, and you should feel this muscle working, and become familiar with its position in the body. In this way you will probably be able to attain greater strength and control in your playing even without any further muscular develop-

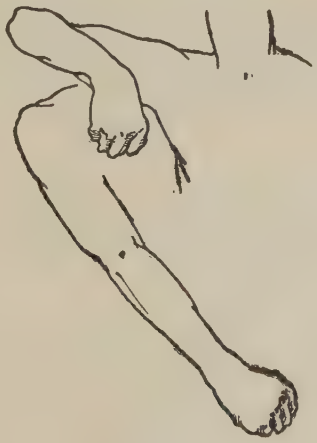

FIG. 10.

ment. Reverse the exercise for the left arm. This exercise may be practised twice or even three times a day, but it should not be repeated more than eight times during any one period of practice. It is important to remember that muscular development cannot be acquired in a week, but must be a gradual process. The ultimate aim of every student should be to acquire a fine technical equipment, and this largely implies a correct muscular equipment.

Exercises 6–8 and 13–14 should now be practised with varying degrees of tone from *pianissimo* to *fortissimo,* all variation of tone being obtained by *variations in the energy of the arm push—the louder the tone the more vigorous the push and vice versa.*

### The Question of Tone Quality.

Scientific investigation is rapidly compelling us to alter our views with regard to the production of good tone. It is now admitted by many that students trained upon relaxation methods do not as a rule produce good tone, and by this I mean a good tone over a wide range, from a real *pianissimo* to a real *fortissimo.* There are two rules for good tone: (1) that every physical movement, whether it be a finger movement or an arm movement, should be precise and definite; and (2) that each movement should be aimed deeply down into the key. The bogey of "key bedding" (*i.e.* the false conception that the tone-producing physiological movement should cease before the key is quite fully depressed) is probably responsible for more bad tone than any other technical theory past or present, because it has made most of us literally frightened of the keybeds. Of course it must be admitted that actually squeezing against the keybeds *after* tone has been produced is a fault, and that a few students may need curing of it, but it is also true (space forbids me to discuss it in much detail) that all physical movement in piano-playing should be modelled on the natural physical movements that we use in our ordinary everyday life. We are not, for example, afraid of the ground when we walk or run. A good illustration of correct pianoforte movements can also be found from most ball games, in which, as any professional will tell you, the "follow through" is of fundamental importance to the correct shot. In golf and tennis, what happens to the club or racket after the ball has been hit is quite as important as what happens before. In both these games we mentally aim our physical movement a long way past the ball. Only in this way can the correct shot be obtained, and only in this way can good tone be obtained. Only by aiming mentally right beyond the keybeds can we obtain really good tone. Each physical movement should be aimed past the keybed, and then, the moment the keybed is *felt* should the relaxation process take place. Then *complete* relaxation is seldom desirable, and even a *degree* of relaxation is possible only if the passage is moving sufficiently slowly to allow it to take place between the playing of each note, and if there is time to obtain the necessary firmness *before* the next key is depressed.

Another important point to remember in connection with the production of good tone is that once any physical movement (no matter whether it be a movement of the finger or the arm) has commenced, that movement must continue in a precise and clear-cut manner, without any trembling, halting, or spasmodic movements, until the finger-tips (with or without the arm behind them) are brought to a full stop by the keybeds.

Every note in a musical composition is due to sound at a certain point in time. If a physical movement is commenced earlier than is absolutely necessary, this movement will have to be checked before it reaches the keybed, otherwise the note will sound before it is due. The majority of students spoil their tone by starting their movements too soon, and are forced thereby to check them in order to prevent the note from sounding too early. This checking process brings additional muscles into play, always making control more difficult, and frequently causing that lack of steadiness of hand, arm, and fingers which is the ruination of good tone. In addition, valuable momentum which has been acquired in the earlier stages of the movement is lost. This naturally prevents the player from obtaining the loudest tone which he is physically capable of producing.

Here is an exercise which will help in this connection.

With the arm technique already described, play any succession of chords or intervals. Use the same note values (*i.e.*, all minims, or all crotchets, etc.) throughout any one exercise, and be particularly careful to play every exercise in absolutely strict time. Play with varying shades of tone from *piano* to *fortissimo*. Make a deliberate effort to delay the start of each arm movement as long as possible. For *forte* tone commence a few inches above and slightly in front of the keys. For *piano* and softer tones start from the surface level of the keys. These exercises should first be played with chords and intervals, and later the same idea can be employed in connection with Exercises 13 and 14 described above.

### Finger Touch.

The faults most usual in the execution of Finger passages are amongst the following:

(1) Lack of real *legato* and *legatissimo*.
(2) Lack of cleanness and brilliance.
(3) Lack of evenness, facility, and fluency.
(4) Lack of ability to continue a prolonged *forte* or *fortissimo* passage either at all or without discomfort or cramp.

It is fairly clear that the correct use of the arm is essential in any arm touch. This point obviously requires no further discussion. It is not, however, so generally understood exactly what the correct conditions of the arm should be when the fingers are executing scale and arpeggio types of passage. There is no doubt, in spite of the many theories to the contrary, that the self-supported arm (that is, the condition when the arm is supported in the necessary playing position solely by means of its own supporting muscles) is undesirable in the majority of finger passages. This is equivalent to saying that some or all of the weight of the arm must rest on the keybeds by means of each finger in turn, in a somewhat similar manner to that in which the weight of the body rests on the ground, through each foot in turn, in the process of walking. I will tabulate the reasons for this, and then proceed to discuss each of them a little more fully.

(1) No finger can function with its maximum control unless some other finger is resting (*i.e.* supporting the weight of the arm) on a solid surface.
(2) The act of resting the arm in this manner provides automatically a perfect *legato* without any conscious thought whatever being given to the process.
(3) This arm condition makes the playing of finger passages very much easier work for the fingers themselves.

Now we will examine these points in detail. I will demonstrate the truth of the first by means of a simple experiment carried out by yourself. Sit on a chair, and with the arm extended forward in approximately the piano-playing position, raise and lower (as in playing a note) any *one* finger (for example, the middle finger) eight or ten times consecutively. Perform this movement both gently and vigorously, and as if you were endeavouring to obtain different degrees of tone from *pianissimo* to *fortissimo* from the pianoforte. Try to sense in your mind the degree of control which you have over this action, and having realised how much or how little you have, proceed straight to a table, sit down in front of it, firmly place the index finger on the table (this finger should be curved in approximately the piano-playing position), press reasonably firmly on this finger, and then repeat the preceding experiment (raising and lowering the middle finger as in playing). You will, I think, discover that you have a far greater degree of control of this middle finger when the next-door finger (the index finger in this experiment) is established firmly on the table. A really vigorous attack with the third finger as for *fortissimo*, and a really delicate movement as for *pianissimo*, are more easy to obtain. In addition, the whole hand and arm seems steadier and the other fingers freer from spasmodic nervous twitchings. It is now only necessary to realise: (*a*) that what is true of the control of the movement of the third finger under these two conditions of resting and non-resting, must be equally true whether the resting process takes place on a table or on the bed of any particular key; and (*b*) that the keybed of any key will provide a supporting point as solid as any table for the fingers, and the advantages of this idea must surely be clearly seen. After all, we are all aiming at control, and anything which will give greater control, provided that it offers no serious disadvantages in other directions, must be of assistance to the player.

(2) This point can be explained very shortly by directing your attention to the act of walking. Normally we walk in such a manner that, if our feet were fingers and the ground the keybeds, we should walk with a perfect and an entirely automatic *legato* touch. Think of walking *staccato,* and how difficult this would be! We walk *legato* because the weight of our body keeps one foot on the ground until the other foot comes forward to support the weight. The weight of our body does not make walking a difficult or a trying process. As for the necessity of having a solid surface under one's feet, anyone who has tried walking on something soft and yielding, such as fine sand, will realise how difficult the process is. I do not think I need say any more on this point.

(3) The question of physical ease can be demonstrated by a simple experiment. Sit on a chair. Extend the forearm forwards as if about to play the piano, and then ask yourself whether you would like to sit in that position, say, for a period of an hour without any support whatever for your arms. The answer is obvious; and yet, if you play in this fashion (that is, with the arm entirely self-supported), it is very much the same thing. An hour's *continuous* practise of scales, arpeggios, or similar passages with an entirely self-supported arm would be almost as tiring as sitting down and extending the arms without support, and keeping them there for a similar period. One could, however, quite cheerfully contemplate sitting in an armchair and resting one's arms loosely on the arms of a chair (so that the chair provides the support) and remaining in this condition for any number of hours.

The first point, therefore, is to learn how to acquire this knack of resting. It is, after all, merely a knack, and can be acquired just as easily as any of the other muscular tricks we are called upon to perform in pianoforte-playing of any kind. In this series of exercises you will again require the help of some other person.

EXERCISE 16.

Repeat Exercise 4, making certain that you can rest the weight of your forearm fully upon the support provided by your helper. The support should now be given by your helper, not behind the wrist, but in the middle of the palm of the hand. (See Fig. 11.)

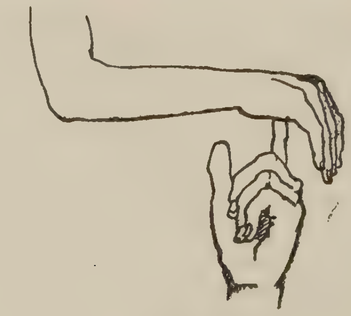

FIG. 11.

Each of these exercises is slightly more difficult than the preceding one, owing to the fact that additional joints (the wrist in this case) intervene between the support and your elbow joint.

The muscles in your upper arm must be completely relaxed in this exercise, but a slight tension is necessary at the wrist in order to prevent this from collapsing. When the right conditions are obtained, your helper should withdraw the support as in the previous exercise, and your forearm should immediately fall freely and loosely downwards.

EXERCISE 17.

The same as the foregoing, except that the support is now given to your four fingers placed together (see Fig. 12). In addition to a slight tension at the wrist joint, a certain amount of tension will now be necessary at the knuckle and finger joints to prevent these from collapsing. As before, the muscles of the upper arm and shoulder should be completely relaxed.

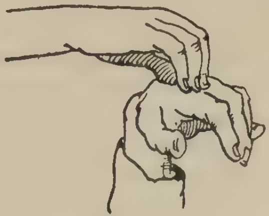

FIG. 12.

EXERCISE 18.

The same as the above, except that the support is now given to each finger separately, the others being slightly raised (see Fig. 13). Tension will be required at the wrist, and at the knuckle *and the finger joints of whichever finger is being used.*

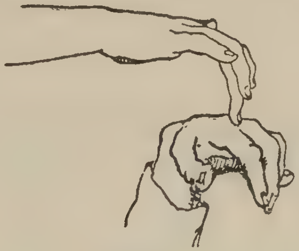

FIG. 13.

EXERCISE 19.

You should now practise playing five-finger exercises upon your helper's arm, which should support the weight of your arm through each finger in turn. The same test of withdrawing the support in order to see whether your arm is really resting should be carried out frequently.

It is important to realise: (1) that this act of resting does not prevent the fingers being raised to any desired height above the level of the keys, or prevent them from being used vigorously and sharply; and (2) that for *forte* and *fortissimo* finger work the fingers must necessarily be raised well above the surface level of the keys in order that it may have enough distance in which to gather the speed necessary for loud tone.

This act of raising well the fingers before their descent was the foundation of the older German schools of technique, and incidentally produced many great pianists. It fell into disuse largely because the act of resting the arm was not taught with the vigorous finger raising, and thus it led to arm fatigue, and in some cases to severe arm cramp. Even intense and long-continued finger activity, however, is perfectly easy and comfortable, provided that the arm is resting as I have described above.

Remember also, in connection with tone, the point which I have discussed previously—namely, that every movement (in this case finger movement) must be clean, must be aimed deeply into the key and beyond it, and must not be started too early. The majority of students, even if they do raise their fingers well, perform each downward movement as more than one action. I have seen many students raise their fingers nicely, in preparing for the playing of a series of notes, then bring them down to the surface level (or somewhere near that point), pause for a fraction of a second there, and then make a little stab to finish off the movement! The proper way is to raise each finger to the required height well before it is wanted (remember that the louder the tone required, the higher should the finger be raised), and keep it poised there until the very last possible moment. Then the finger should be launched forth vigorously and cleanly, and must be aimed not to the surface level of the keys, not even to the keybed, but to a point lower even than this. When the finger has arrived at the solid point of the keybed (the tone having been successfully produced), that finger takes on the function of supporting the weight of the arm, in order that the next finger can carry out the necessary operation easily and successfully. This process sounds complicated when analysed step by step, but, in reality, the knack of it will quickly be acquired by means of the exercises in this chapter. It may take some little time before this process can be properly carried out, but I assure you that no good finger technique is possible until it can be done, and I would also like to point out that even months, or a whole year for that matter, spent in laying the foundations of a correct finger technique will be more than repaid in later years. As a matter of fact, an intelligent student will be able to perform all the above exercises comfortably in a very short time, and I advise that these exercises should be learned *away from the keyboard*, whilst the mastery of the correct arm technique (described previously) is being acquired through exercises and suitable pieces at the keyboard. On no account, however, should you play any ***finger*** passages at the keyboard until you can perform the above exercises easily and well.

When you have learnt the process of " resting " the arm properly, it then becomes important to learn the correct use of each single finger independently. It is necessary to realise from the very beginning that the correct finger movement for piano-playing is a one-piece movement of the whole finger working from the knuckle joint. By this I mean that there should be no independent movements at the middle or the nail joints. When a natural degree of curvature has been assumed (see Fig. 8 for approximate curvature), the whole finger should move upwards or downwards at the knuckle joint. As far as possible, the same degree of curvature should be maintained throughout the complete movement upwards and downwards.

Do not forget that for the tone to be controlled and of good quality the movement of each finger must be sharp and clean, and must on no account commence even a fraction of a second too soon. Remember also that the tip of each finger must be aimed deeply to a point below the level of the keybeds.

Some of the muscles controlling the downward finger movement which I have just described are situated in the palm of the hand, and one of the most important things to master is the ability to use these muscles (as powerfully as may be required) without causing thereby undue tightening or stiffening of the arm. One of the best exercises for obtaining this " isolation " * of the correct muscles is to practise ordinary gripping, the act of which should call into play the very muscles we require for finger technique. This must not be allowed to cause stiffening at the wrist, elbow, or shoulder joints.

You will now require your helper again. You should take your helper's hand loosely, as if about to shake hands. The ordinary handshaking action should not, however, be performed, but you should gradually tighten your grip of your helper's hand and fingers, at the same time concentrating your mind on the region of the palm of the hand. Gradually increase the tightness of the grip until the maximum power is obtained. During the act of gripping, your helper should move your hand to and fro at the wrist joint, your forearm at the elbow joint, and your whole arm at the shoulder joint. These movements should not cause any slackening of your grip, and however tight your grip is, there should not be the slightest tension at your wrist, elbow, or shoulder. Until this knack of isolation can be successfully mastered, no real finger control, fluency, individualisation, or power is possible. The inability to isolate in this way is the principal cause of the inability to continue the playing of *forte* or *fortissimo* passages without fatigue. It is also one of the main causes of pianistic cramp, which attacks so many advanced students who practise really vigorously for long periods of time.

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* The term isolation means the use of one set of muscles without bringing into play other unnecessary muscles.

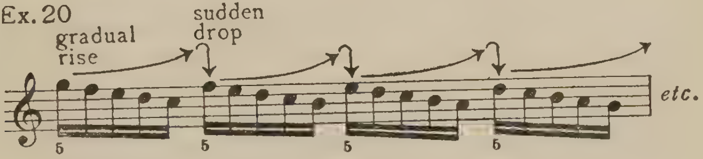
When you have learnt to isolate correctly, you should try to bring about the same muscular conditions of hand and arm when using finger touch at the keyboard.

During the playing of finger passages, the arm must always "rest," and you should concentrate on the region inside the palm of the hand until correct habits have been formed. When this has taken place, such conscious thought is unnecessary, and even, in fact, undesirable. This is true of all physical actions and habits in connection with pianoforte playing.

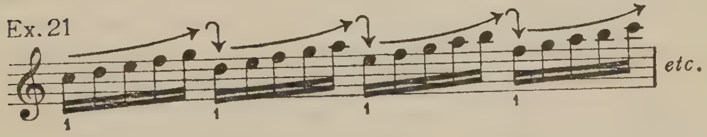
## Rotation.

For many reasons which I cannot discuss here for lack of space, I find that it is best to eliminate all forearm rotary movements from scale and arpeggio passages, and to substitute for them (for the purpose of flexibility and other reasons) a rising and falling of the wrist directly upwards and downwards. This rising and falling of the wrist is one of the greatest aids towards flexibility and fluency in all finger passages. Exercises 20–24 will help you to acquire this rather new type

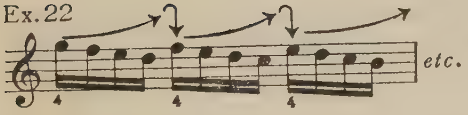
Ex. 20



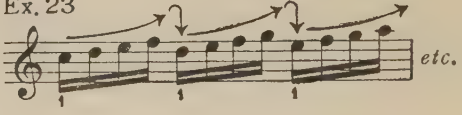
Ex. 21



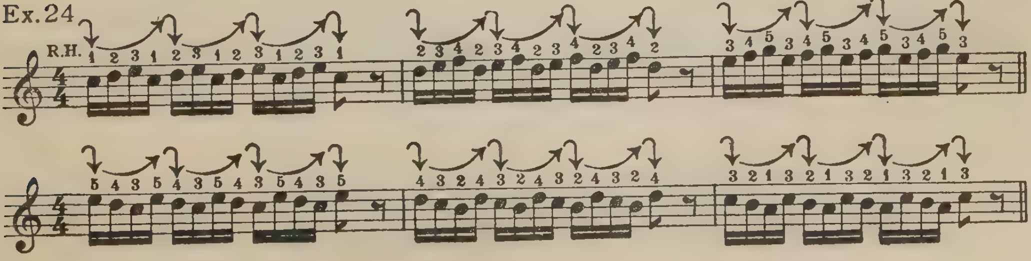
Ex. 22



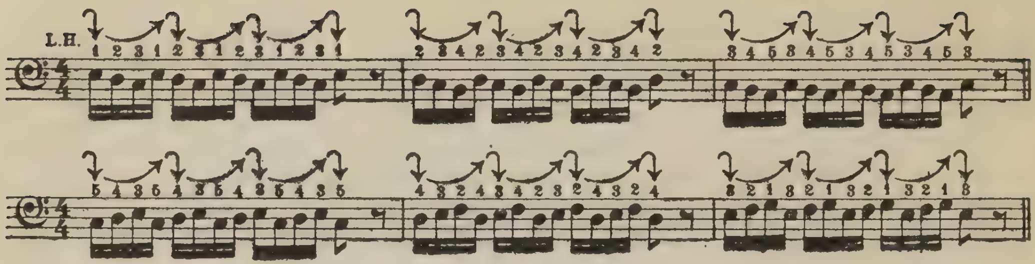
Ex. 23



Ex. 24



EXERCISE 24—*continued.*



of flexibility. The arrows written above the notes show the rise and fall of the wrist clearly, and Fig. 14 shows the two extreme wrist positions, "up" and "down." After a short time you will find that you will perform these movements quite naturally even in complicated passages.

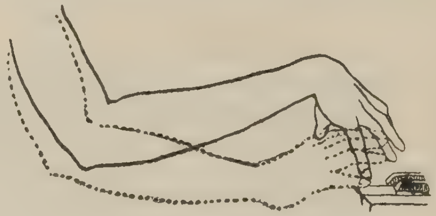
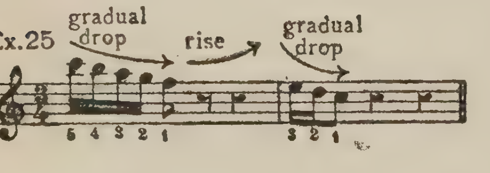


FIG. 14.

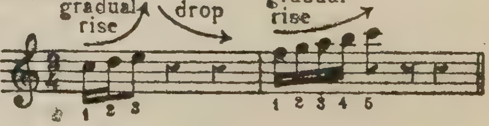
Remember that if you are to succeed, you must *entirely* eliminate all rotary and lateral movements. Remember also that when the wrist drops suddenly, the finger which plays the note corresponding to the sudden drop of the wrist should not be allowed to bend at its own knuckle joint, otherwise the tone is liable to be uncertain. As a matter of fact, it is the actual drop of the wrist and hand which provides the motive power for playing the note coinciding with the sudden wrist drop, rather than any independent movement of the finger on its own knuckle joint. This movement is particularly helpful where the drop of the wrist takes place when the thumb is playing a note, because it solves the difficulty of the awkward movement of the thumb—which is always an unruly member! In such cases there need be no independent movement of the thumb whatever, the drop of the wrist providing more than enough motive power to depress the key. This wrist-drop is always the best means of providing the regular rhythmic accents when the structure of the passage demands such accent.

For scales and arpeggios, the same rise and fall of the wrist can be applied with beneficial results. Scales should be practised as in Exercises 25 and 26, and then the sections should be put together as in Exercise 27.

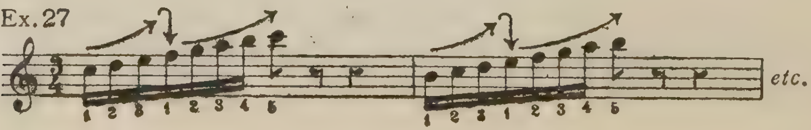
Ex. 25



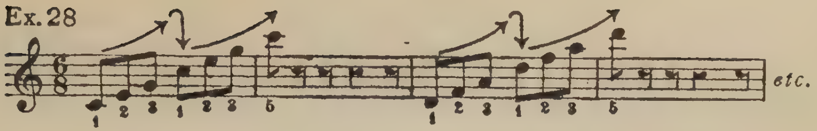
Ex. 26



Ex. 27



Ex. 28



Exercise 28 shows the same principle being applied to arpeggios. Remember all the time that the forearm must "rest," the necessary isolation must be employed, and each finger movement must be precise and definite, and must be aimed deeply down into the key.

### Gymnastic Exercises.

I must now return to the question of gymnastic exercises, the importance of which has been already emphasised. The following should, with the earlier exercises mentioned in this article, be practised daily. Each exercise need be repeated only five or six times, and the whole process need take no longer than a few minutes. You will find them very valuable, since if they are practised regularly they will help you to maintain your flexibility and control during busy periods when you have little or no time to give to your actual keyboard practice. The exercises should be learned gradually and by easy stages, until finally they form part of your practice routine.

EXERCISE 29.

Stand erect with the arms pointing straight downwards. Keep the arms straight and raise them directly upwards and forwards, continuing over the shoulder and making as wide a circle as possible. Make about six complete circles, and then reverse the direction, starting backwards and over the shoulders instead of forwards (see Fig. 15).

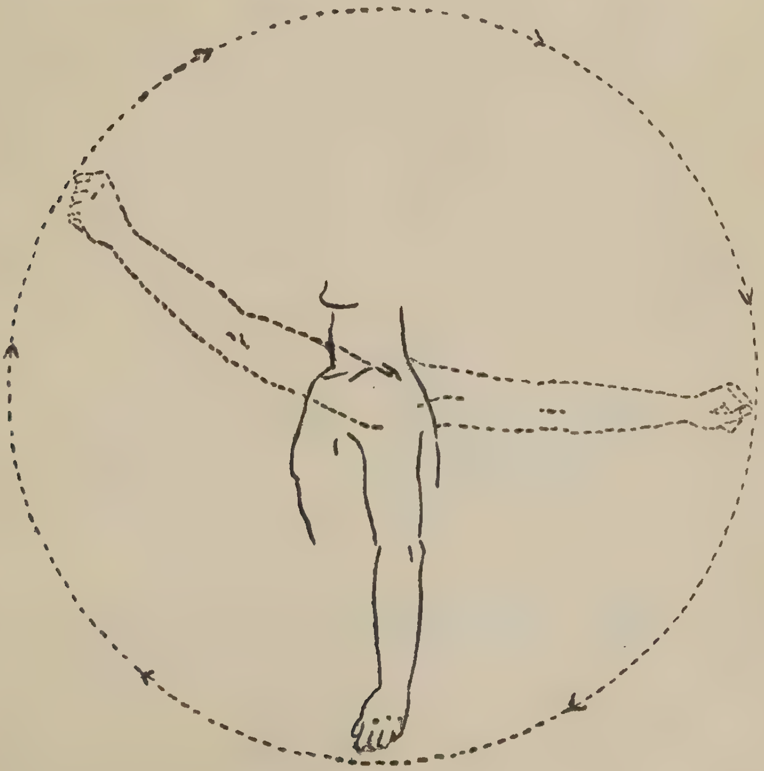


FIG. 15.

EXERCISE 30.

Stand erect with the arms pointing directly downwards. Raise them directly upwards and forwards until they are pointing perpendicularly upwards above the shoulders. Lower downwards again until the original position is assumed. Perform these movements vigorously, with a slight pause at the top and bottom positions (see Fig. 16).

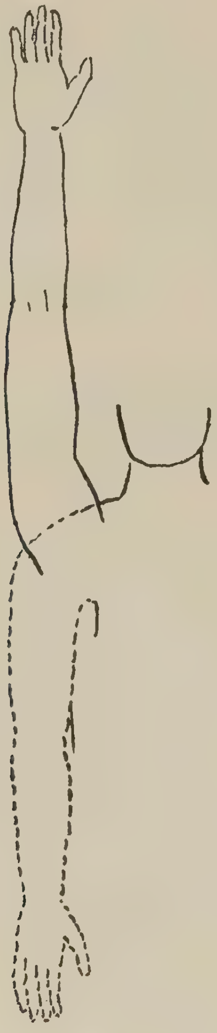


FIG. 16.

EXERCISE 31.

Stand erect with the arms pointing outwards and sideways at shoulder height. Cross the arms, and then uncross again, taking them as far backwards and far forwards as possible each time (see Fig. 17).

EXERCISE 32.

Assume the position shown in Fig. 18, with the hands pointing downwards. Now rotate the upper arm so that the hand and forearm move upwards as shown in the same diagram (position

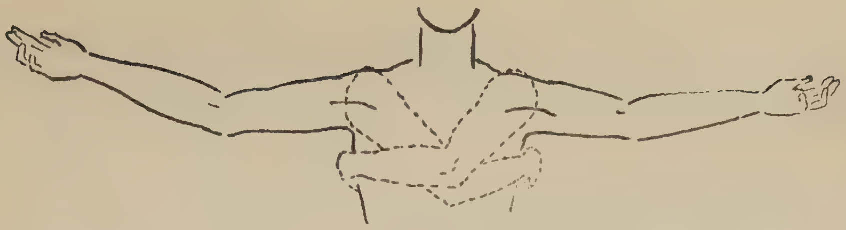


FIG. 17.

indicated by the dotted lines). Bring the hands back to the original position again, and so on Perform these movements vigorously.

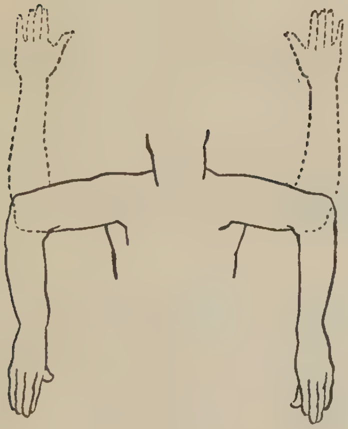


FIG. 18.

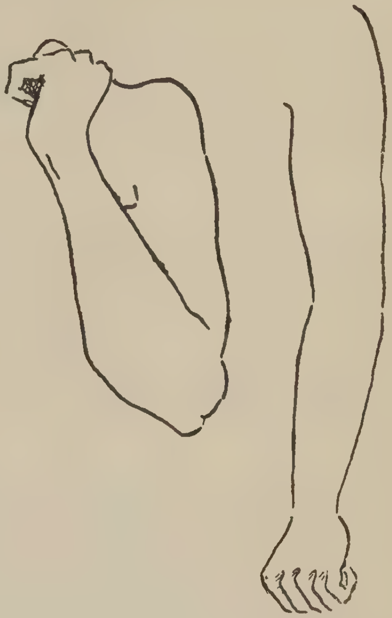


FIG. 19.

EXERCISE 33.

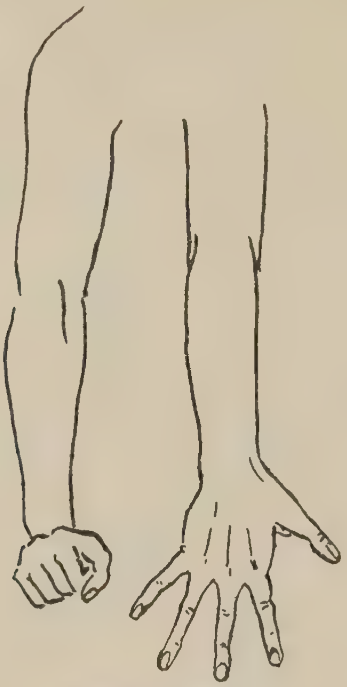
Extend the arm fully away from the body in any direction and then bend the forearm as far as possible towards the shoulder. This movement should be performed gently. Then completely straighten the arm vigorously. Continue bending and straightening the arm at the elbow joint. It is important in this exercise that the bending movement towards the shoulder should be performed very gently and slowly, and the straightening movement as vigorously as possible (see Fig. 19).

EXERCISE 34.

I have already given you a special exercise for developing the pectoral muscle, the muscle which is required for the production of tone in arm technique. Here is one for developing the necessary muscles for finger technique. Open the hand until the fingers are level with the back of the hand, then bend them vigorously, endeavouring to make the tips of the fingers reach the wrist. Try to make the early part of the movement come entirely from the knuckle joint. Make the bending movement forceful and vigorous, and the reverse movement gentle.

EXERCISE 35.

The reverse of the above. Clench the fist lightly, then open out the fingers vigorously, taking them as far back as possible. Make the opening-out movement vigorous and the clenching movement gentle (see Figs. 20 and 21).



FIGS. 20 AND 21.

With regard to these two last exercises, it is most important that they should not be practised at all until the necessary "isolation," discussed earlier in this chapter, has been thoroughly mastered. If they are practised too soon, they are liable to do as much harm as good. When practising them, it is advisable to keep the whole arm continually moving about in various positions. This is in order to prevent the muscles in the arm becoming tense, thus locking the wrist, elbow, and shoulder joints, whilst the fingers are moving.

Here are three hints about gymnastic exercises in general.

(1) Exercises of this description are really valuable only if they are practised regularly, even if the time spent on them is only a few moments each day.

(2) Do not be over enthusiastic, and be warned against repeating each exercise dozens of times without a break. Such a procedure might easily strain the muscles involved, and the last state would then certainly be worse than the first. Try to practise them with your mind concentrated on correct movements all the time, thinking and believing that they will ultimately do your piano-playing good.

(3) Do not expect miracles. No muscle can increase its size or its working capacity in a shorter time than a month or two, but such a period of time is very little in the life of a pianist.

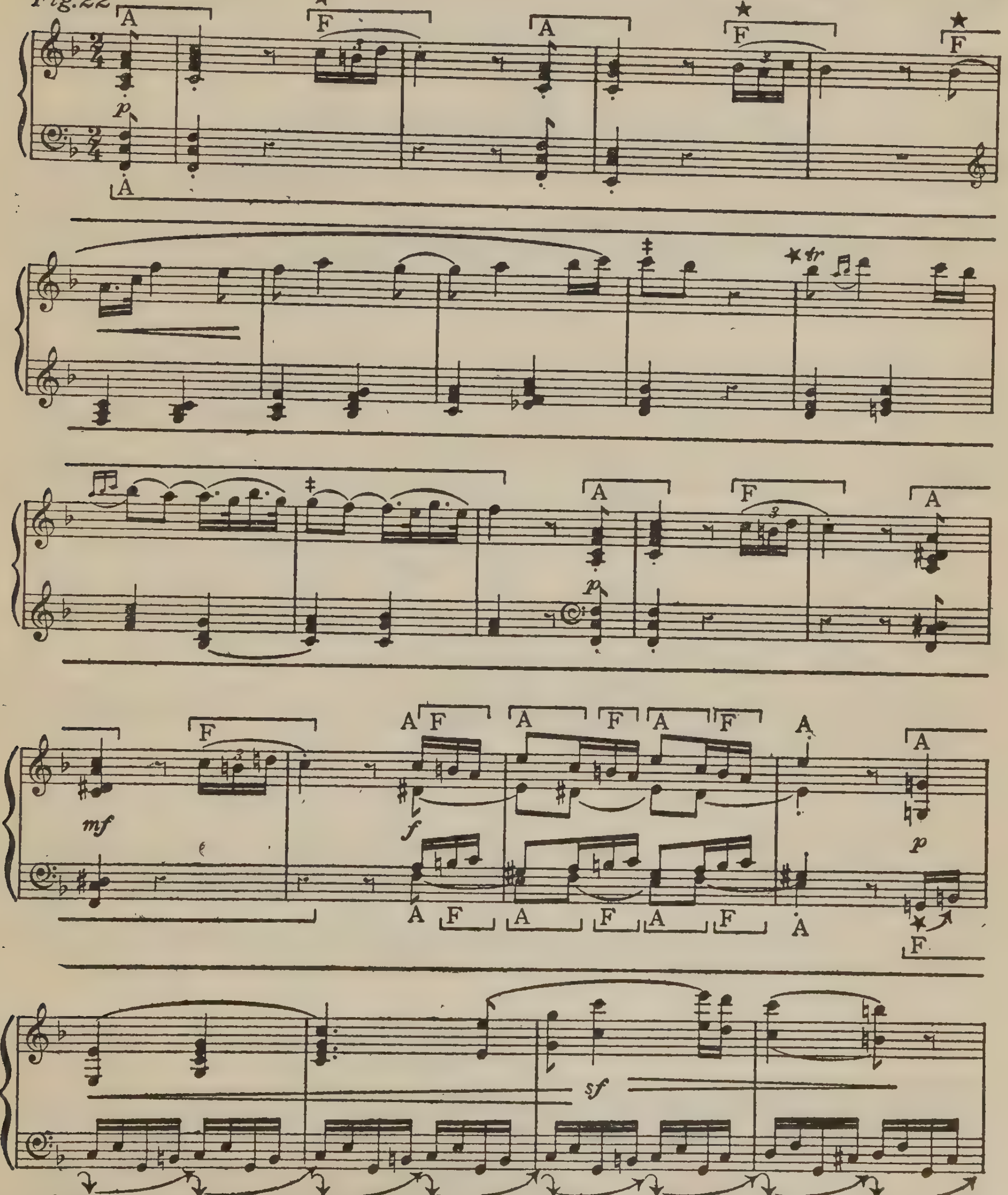
## A Practical Application of Touch Analysis.

At this stage we have discussed the two fundamentally distinct types of pianoforte passages, and we shall now attempt to analyse an extract from actual piano music, in order to show the practical application of these touches.

In the following extract, the letter "A" refers to notes played by a forward movement of the arm, and the letter "F" refers to notes played by a finger touch with the weight of the arm resting on the keybeds. The sign ↘ refers to a sudden drop of the wrist for the note or notes indicated by the head of the arrow; the sign ↗ refers to a gradually rising wrist, the rise taking place over the entire length of the arrow.

*Fig.22*

**BEETHOVEN,** *Sonata, Op.10, No. 2.*



* It should be noted that the *first* note of every finger passage should be played by arm touch
‡ It should be noted that the *second* note of two repeated notes should be played by arm touch

FIG. 22—*continued.*

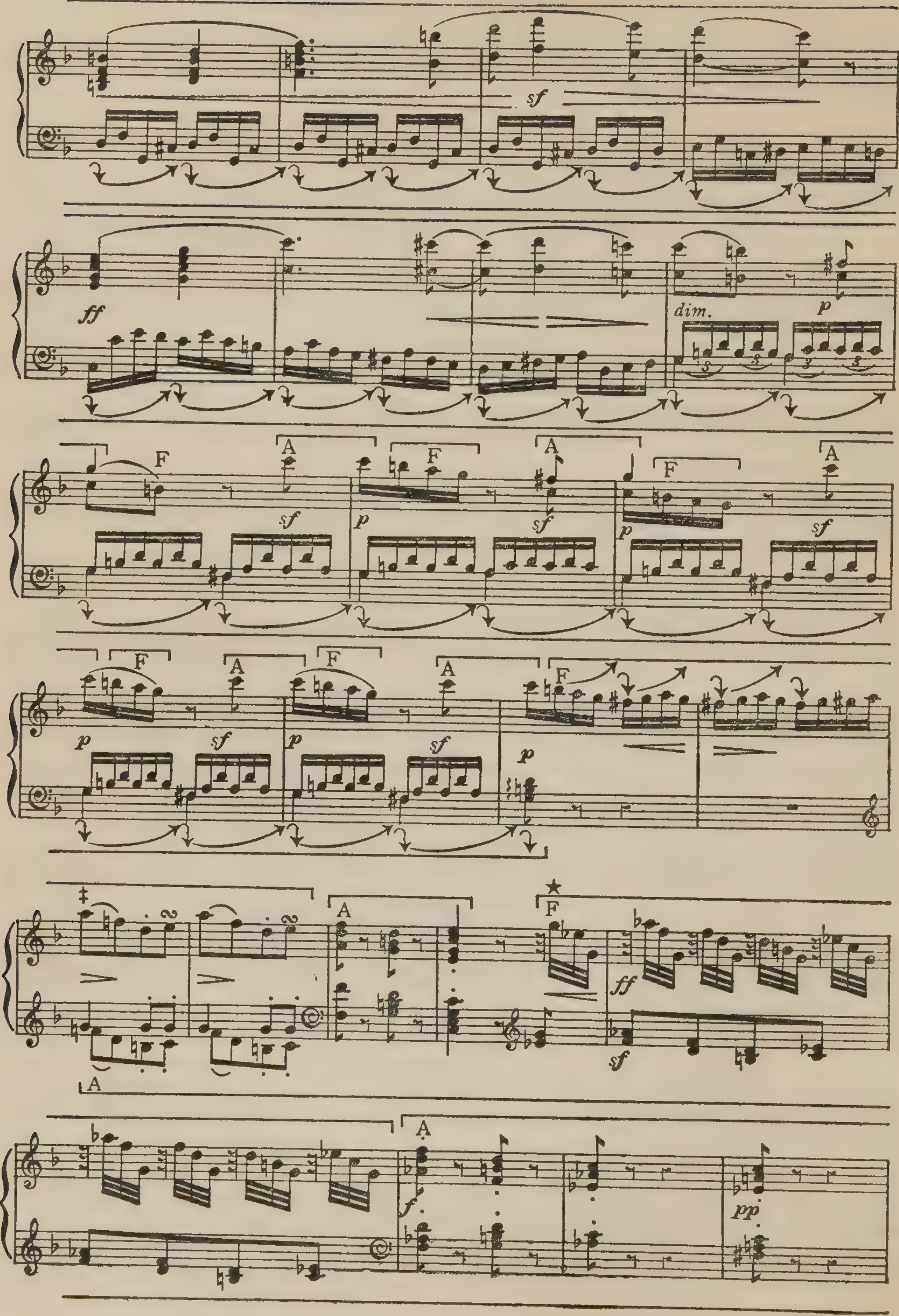
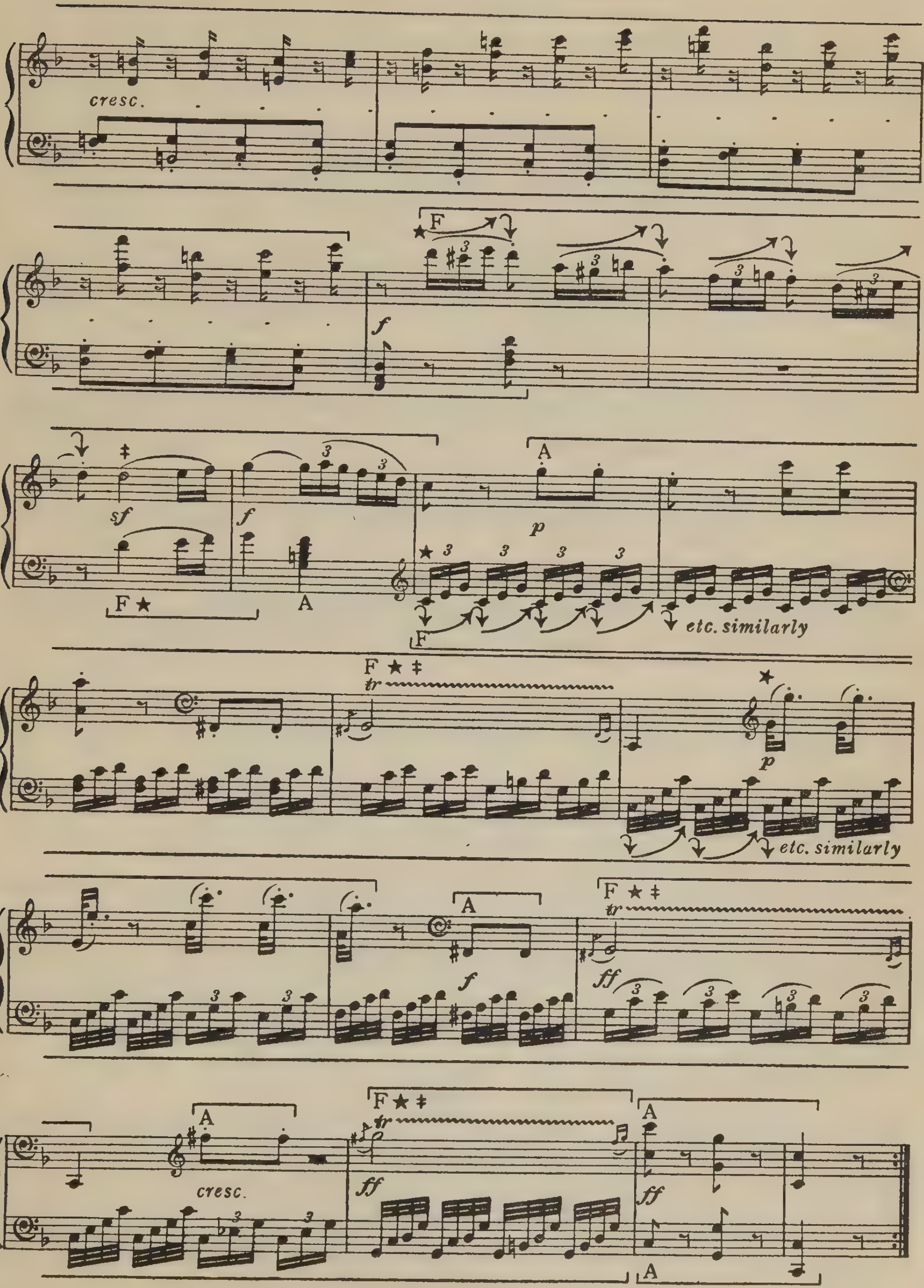


FIG. 22—*continued.*



## THE USES OF THE SUSTAINING PEDAL.

Correct pedalling is of vital importance in all good playing. The pedal is not merely a piece of extra mechanism fitted to the piano—it is an essential part of it. If it is used badly, the finest keyboard technique will produce only a medley of discordant sounds. If it is not used at all, a great deal of music, especially that written in more recent years, sounds as if it is lacking some essential element. Let me give you an example. In Figs. 23 and 24 are two extracts. Play the first one through without any pedal at all, and you will see how thin it sounds. Now play the second, keeping the pedal depressed throughout the entire length of the extract. Long before you get to the end you ought to realise that something is wrong. When you do get to the end, still keep the pedal depressed and listen to the effect you have produced !

*Fig. 23* **CHOPIN:** *Prelude, Op. 28, Nº23.*

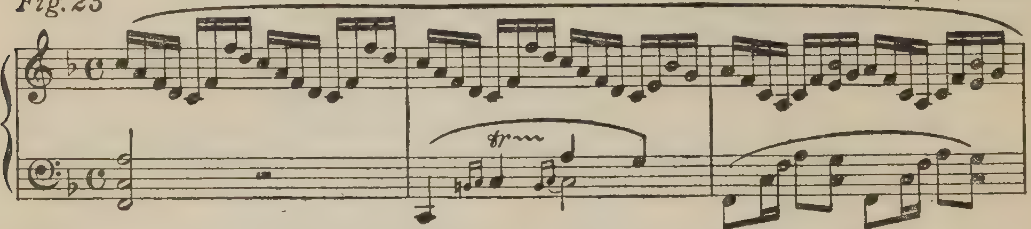
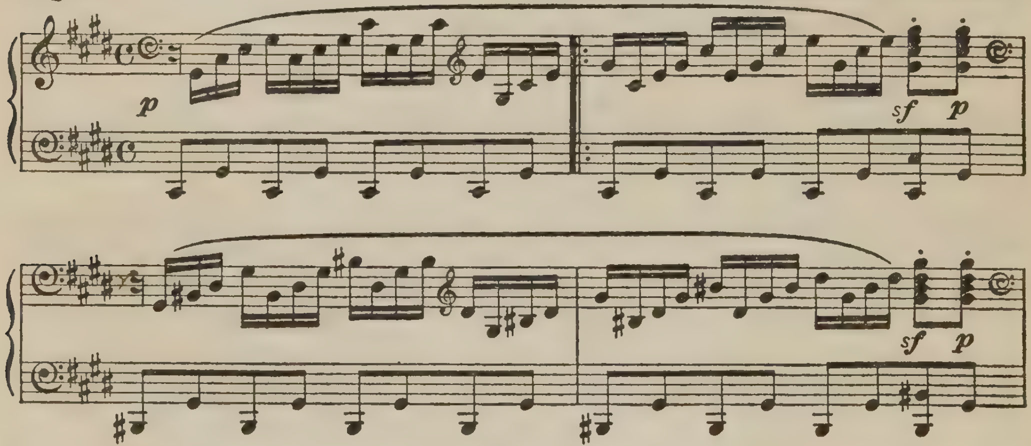


*Fig. 24* **BEETHOVEN:** *Moonlight Sonata, Last Movement.*



A great deal of pedalling has to be worked out by the student himself, since even in those editions where the pedal is marked the results are not always satisfactory. The markings are often incomplete, and, in addition, the system of pedal markings used in the majority of editions (the "Ped." and ✳) is inefficient, if only because the actual space on the page taken up by the markings themselves prevents the exact point at which the pedal is depressed or released from being really clearly indicated. For this reason, a detailed knowledge of when and how to use the pedal is essential for every student.

### The Relationship of Harmony and the Pedal.

The correct use of the pedal is linked up with the harmonic structure of music, and in this connection one of the most important things to realise is that every chord has its own particular effect, its own particular colour, and its own particular character. In this way, chords may be likened to human beings, who also possess their own individuality. Any attempt to interfere with the individuality of the human being is liable to result in discord in life, and interference with individual chords through blending them together by means of keeping the pedal depressed for too long a period similarly produces discord in music.

It is true that certain chords are related to one another, some nearly and some more distantly. It is unfortunately impossible, in an article of this description, to give any real understanding of the relationship of chords. A comprehensive knowledge of harmony is necessary for this. The safe rule, however, as far as the pedal is concerned, is never to mix up the sounds of any two or more chords by keeping the pedal depressed, unless it is found by actual experiment that the result obtained is pleasing and artistic.

### The Pedal for Sustaining Effects.

The principal use of the pedal is to sustain sounds which cannot be sustained by means of the fingers alone. Below are two examples :—

*Fig. 25*

**BEETHOVEN:** *Op. 53, Last Movement.*

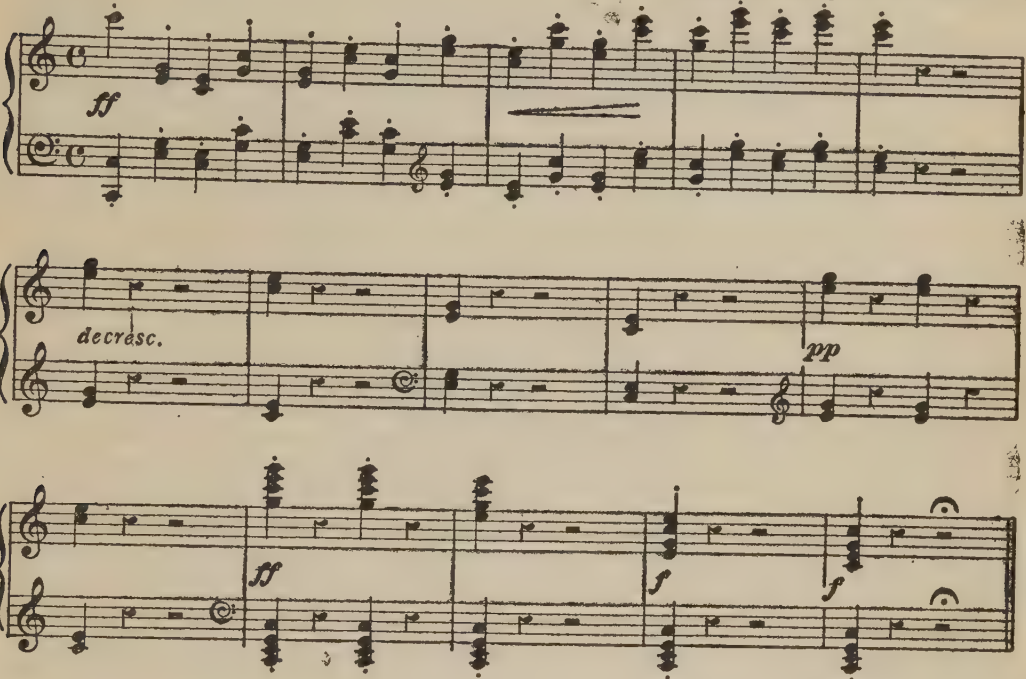
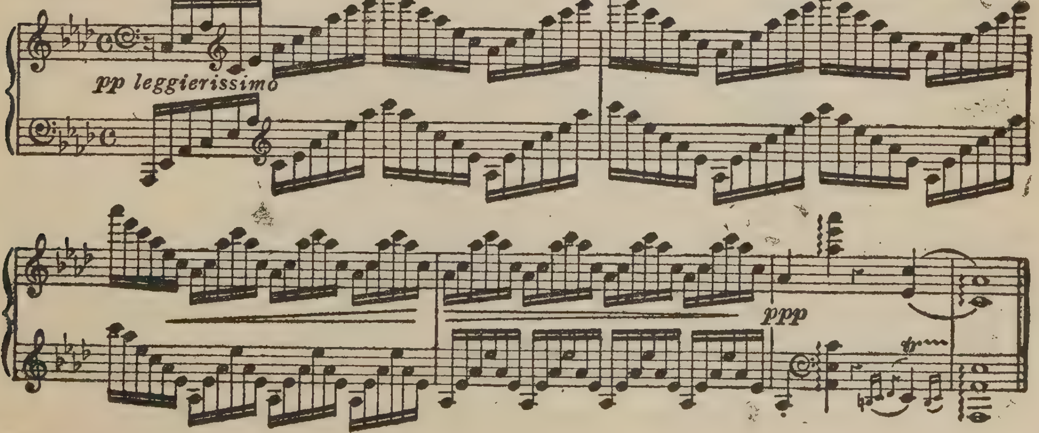


*Fig. 26*

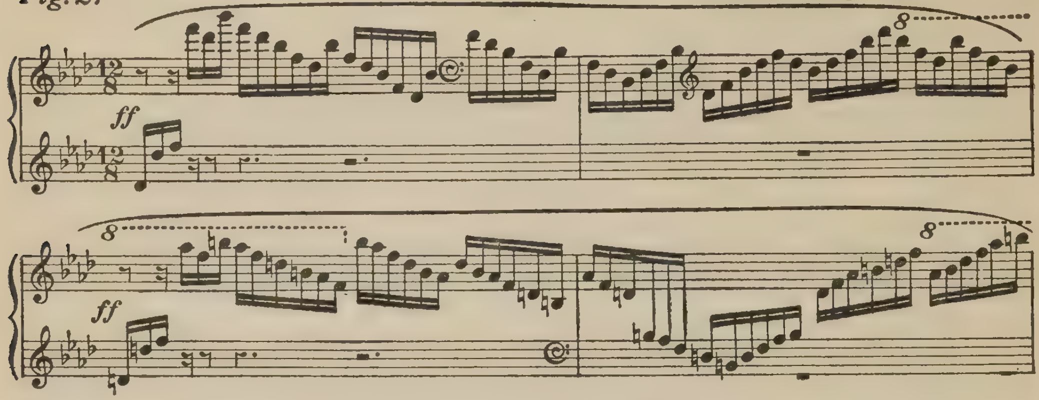
**CHOPIN:** *Etude, Op. 25, No. 1.*



Since in each example the same chord is the basis for the whole passage, the pedal may well be kept depressed throughout. Indeed, the effect is definitely better if the pedal is used in this way; it is more full, rich, and definitely more pianistic. Now consider the following example :—

*Fig. 27*

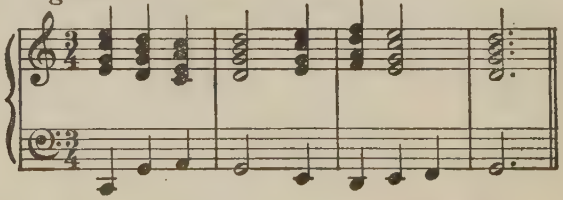
**Beethoven:** *Op. 57, 1st Movement.*



The first two bars are based on one chord, and the third and fourth bars are based on a totally different one. If you play the whole extract through with the pedal depressed throughout, you will notice the smudge which occurs at the point where the harmony changes. At this point, of course, the pedal should have been changed. In other words, it should have been released and then depressed again. In the early stages of study every piece should be analysed with regard to the pedal. As you become more experienced, however, you will not find it necessary to analyse minutely every piece, although difficult sections may require such analysis and experiment. You will gradually learn to recognise both from the look of the passage, and even more quickly, if you are sensitive, from the sounds you are making, when bad pedalling in the form of smudged effects occurs.

You will, of course, realise that in present-day music the harmonic basis is not always so clearly defined as it is in earlier music, and in many cases a certain blurring is not merely not unpleasant, but is actually a necessary part of the music itself. For modern music there are virtually no pedalling rules. Everything must be left to the discretion of the performer. Thus, when analysing music with reference to the pedal, the period at which the music was written must be borne in mind. Suppose, for example, that the following extract could, by some unlikely coincidence, have been written by a composer living in the seventeenth century, and a composer living in the twentieth century :—

*Fig. 28*



In the case of the former, we should be compelled to " change " the pedal for every chord. In the case of the latter, it would at any rate be possible to keep the pedal depressed throughout the whole extract.

### The Way to Use the Pedal for Sustaining Purposes.

For this use of the pedal I favour a very simple form of marking as follows: P————————

The pedal should be depressed at the sign "P" and should be kept depressed for as long as the straight line lasts.

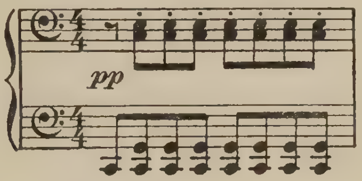
This system is extremely simple, and no complications are liable to arise in its use. It has the very great advantage of the "Ped." and ✻ system—namely, that the exact point at which the pedal should be depressed and released is much more clearly indicated. Moreover, it is possible to follow a marking of this description more closely with another one on the printed page whenever this happens to be necessary.

We shall now consider the pedalling of a passage in which one harmony prevails for some considerable time, and then stops—that is to say, is not followed immediately by any other harmony.

The two important points which will concern us in the pedalling of passages of this description are: (1) the exact point at which the pedal should be *depressed*, and (2) the exact point at which it should be *released*. In a simple passage of the type we are studying, the point of depression is the more important of these two points since the structure of the passage usually indicates clearly the point of release.

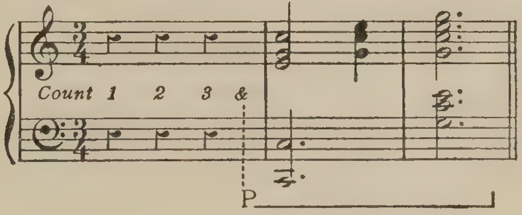
Now, it is possible to depress the pedal in three fundamentally different ways. We can depress it just before, or simultaneously with, or just after the first note of the passage. Consider the following example, and play it with the pedal used in these three different ways.

*Fig. 29* BEETHOVEN, *Op.53.*

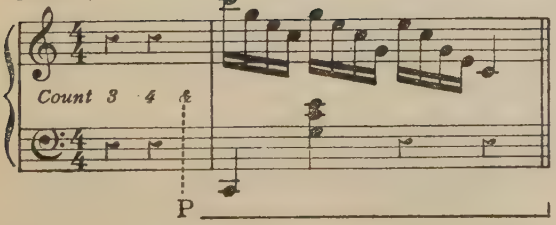


You will probably discover that there is no difference in the result. In more complicated passages, however, the choice of method may make all the difference to the artistic result; reasonable skill in all three methods should therefore be acquired before further intricacies are attempted. Below are some exercises. You should count carefully, making certain that you depress the pedal at exactly the point indicated.

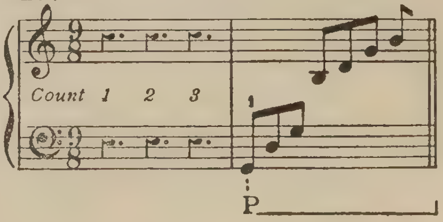
Ex. 36



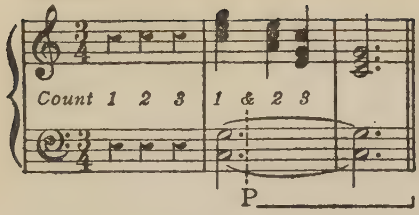
Ex 37.



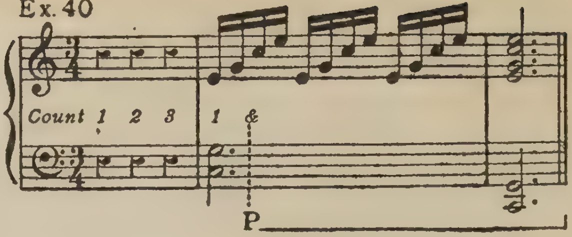
Ex. 38



Ex. 39



Ex. 40



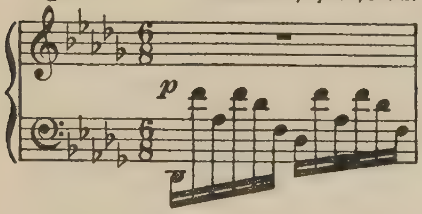
In these exercises, where the pedal is depressed *after* the note or chord has sounded, you must be careful that the fingers do not leave the keys until after the pedal is fully depressed. Otherwise, of course, it is possible that you may not catch up the sounds which you intend to sustain. When you have thoroughly mastered these exercises, you can make them more difficult by depressing the pedal nearer to the chord than is actually indicated in the exercises themselves.

### When to Use the Three Different Methods.

In simple examples of the type shown in Fig. 29 the usual method is to depress the pedal together with, or just after, the first note of the passage. The pedal should, however, be depressed just *before* the passage to be sustained in cases where it is possible that the first sounds of the passage might not be caught up by the pedal if the pedal were depressed either together with, or just after, the beginning of the passage. Consider the following example (Fig. 30) It is clear that the finger can remain on the first note only for such a short time that there is some likelihood —especially if the pedal is a trifle late—of the first note not being sustained at all.

*Fig. 30*

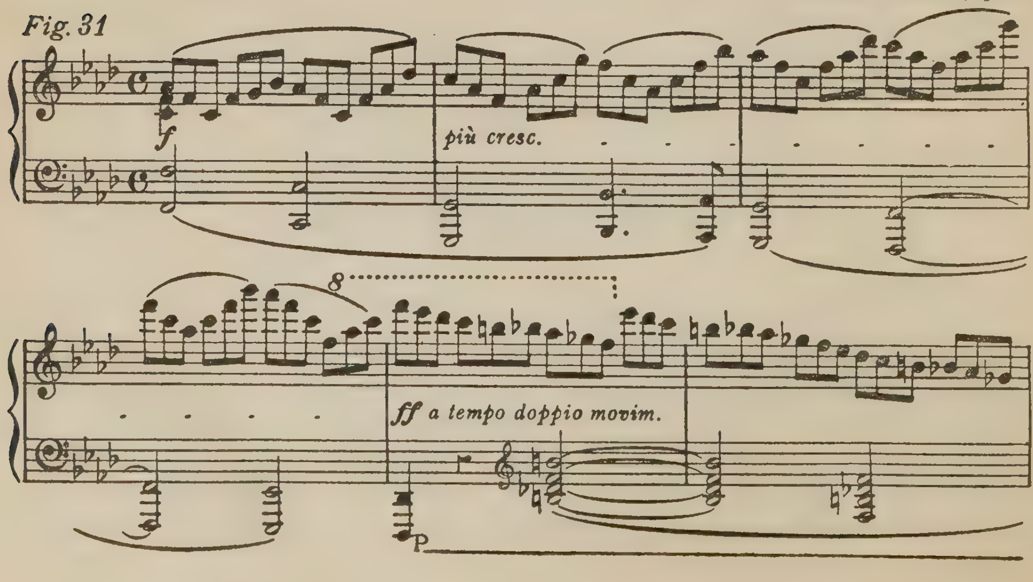
**Chopin,** *Nocturne, Op. 27, No 2.*



The pedal should be depressed *after* the first note of the passage if there is any danger of the sounds from the preceding harmony being caught up with those of the passage which it is required to sustain. Consider the following example :—

**Chopin,** *Fantasie, Op. 49.*

*Fig. 31*

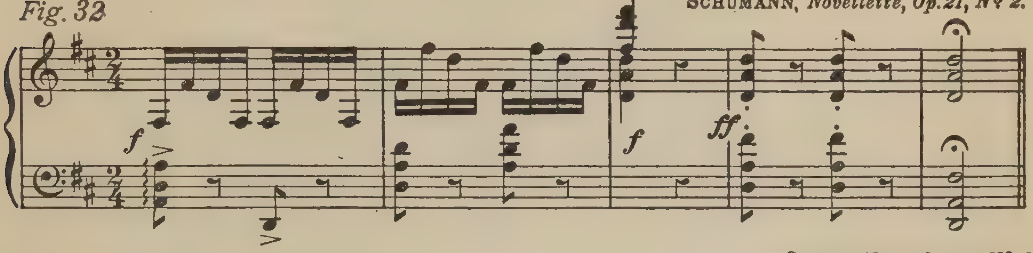


A considerable volume of sound is being accumulated in the first four bars, and it is probable that some of the sounds of these will be mingled with those of the fifth bar, causing an unpleasant and inartistic effect, unless the pedal is depressed just *after* the beginning of the fifth bar.

### A General Principle of Pedalling.

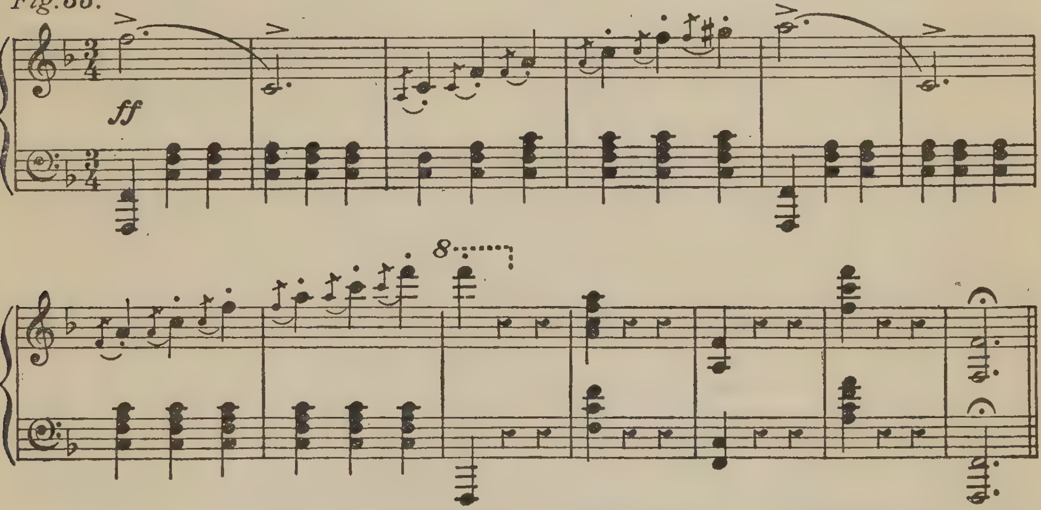
Here is a general principle which is applicable to all harmonic passages, and it must be regarded as a general principle, and not as a hard and fast rule : "The majority of passages which are based on one simple chord sound better if the pedal is used." Examine the following passages :—

*Fig. 32*



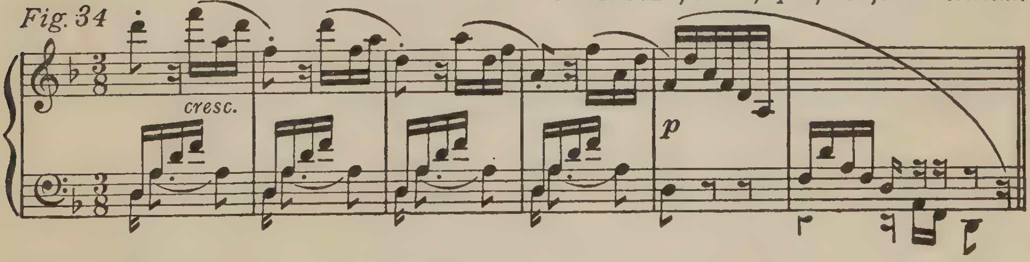
SCHUMANN, *Novellette, Op. 21, No. 2.*

*Fig. 33.*



CHOPIN, *Valse, Op. 34, No. 3.*

*Fig. 34*



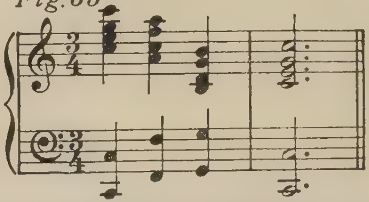
BEETHOVEN, *Sonata, Op. 31, No. 2, Last movement.*

The effect of them all is enriched by the pedal, and although it is not strictly necessary to keep the pedal depressed throughout the whole of each example, the effect is quite pleasant if this is done. To change the pedal at one or more points during the passage merely gives a slight difference in the interpretative effect, and this is purely a question of individual taste, and is, generally speaking, a matter for experiment.

### The Pedal for Legato Purposes.

The pedal is frequently used to enable the performer to make a passage sound *legato*. Many pianoforte passages are impossible to make *legato* by means of the fingers alone. Thus, in the following extract the hand must be raised between each chord, however skilled the performer may be·

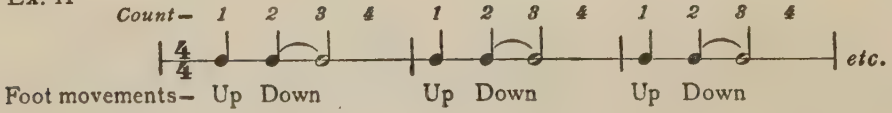
*Fig. 35*



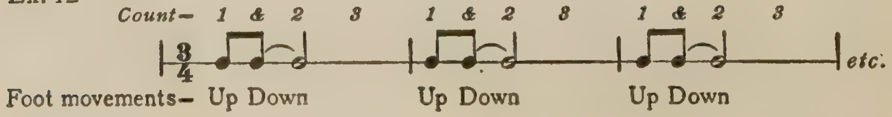
Thus, however quickly the hand moves from one position to the other, some break in the continuity of the sounds must occur. To satisfy yourself, you should try to play it *legato*, without any pedal. You will at once find that this is impossible. The only way to play such a passage *legato* is by means of the pedal. Now, this particular use of the pedal is perhaps the most difficult of all, and great care must be given to this branch of technique in view of its great importance in so much pianoforte music. Suppose we wish to make *legato* such a passage as the preceding one. The first point to notice is that the pedal must be kept depressed, at any rate throughout that period during which the fingers leave the keys of one chord and move either up or down the piano in order to reach the next chord. In other words, while the hand is moving between the chords, the foot remains down and the pedal remains depressed. Also, it is clear that as the sound of the next chord is produced, the pedal must be released, otherwise a smudge will occur. This gives us a clue to the correct method of procedure, which is as follows: The pedal is depressed immediately after each successive change of harmony; is kept depressed throughout the duration of that particular harmony; and is raised, so as to be fully released at that point in time which exactly coincides with the beginning of the sound of the next harmony. The pedal is then depressed after the beginning of the next harmony, and so on.

This sounds a little complicated when expressed in words, and the actions involved are in fact somewhat awkward, by reason of the fact that the hands and feet are required to perform actions which are almost exactly opposite. In the case of this form of pedalling, the foot moves *upwards* and the hand moves *downwards* simultaneously. This is rather similar to trying to perform such operations as patting and stroking oneself at the same time with different hands! We all know the difficulty of such opposite actions as these. For this reason, it is most desirable to practise exercises in connection with the timing and co-ordination of the foot and hand movements *away* from the instrument before endeavouring to apply them in actual performance. In view of the absolute importance of mastering this type of technique, the utmost care and patience should be given. Exercises 41 and 42 consist in timing just the foot movements with reference to regular rhythmic patterns.

Ex. 41

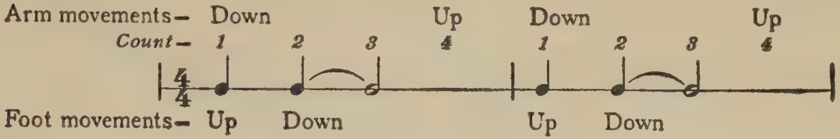

Count— 1 2 3 4 1 2 3 4 1 2 3 4
etc.
Foot movements— Up Down Up Down Up Down

Ex. 42

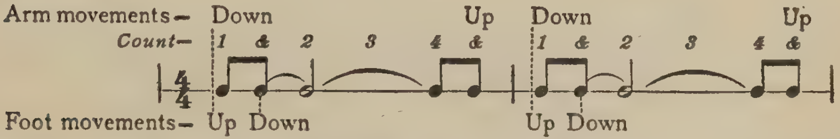

Count— 1 & 2 3 1 & 2 3 1 & 2 3
etc.
Foot movements— Up Down Up Down Up Down

When these have been mastered, arm movements should be practised together with these foot movements. See Exercises 43 and 44.

Ex. 43

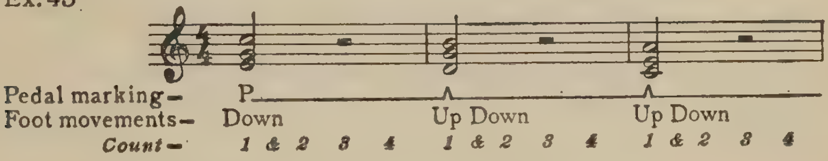

Arm movements– Down Up Down Up
Count– 1 2 3 4 1 2 3 4
Foot movements– Up Down Up Down

Ex. 44


Arm movements– Down Up Down Up
Count– 1 & 2 3 4 & 1 & 2 3 4 &
Foot movements– Up Down Up Down

The next stage is to apply these movements to a series of simple chords on the instrument itself. The following exercise is self-explanatory.

Ex. 45


Pedal marking– P
Foot movements– Down Up Down Up Down
Count– 1 & 2 3 4 1 & 2 3 4 1 & 2 3 4

Exercises of this description should be practised until they can be performed automatically. Remember that pedalling is an essential part of technique, and it is quite as impossible to pedal correctly if one has to be thinking what to do with one's feet all the time, as it is impossible to play fluently if one is wondering what or where the next note is !

The system of marking which I advise for *legato* pedalling is as follows. As before, the pedal is depressed at the point " P " and remains depressed for the portion of the straight line which follows it until it is either changed *legato* fashion ( ______∧______ ) or released altogether ( ________| ). The following passages show the use of the pedal for *legato* purposes.

BEETHOVEN: *Sonata, Op.57, 1st Movement.*

*Fig. 36*

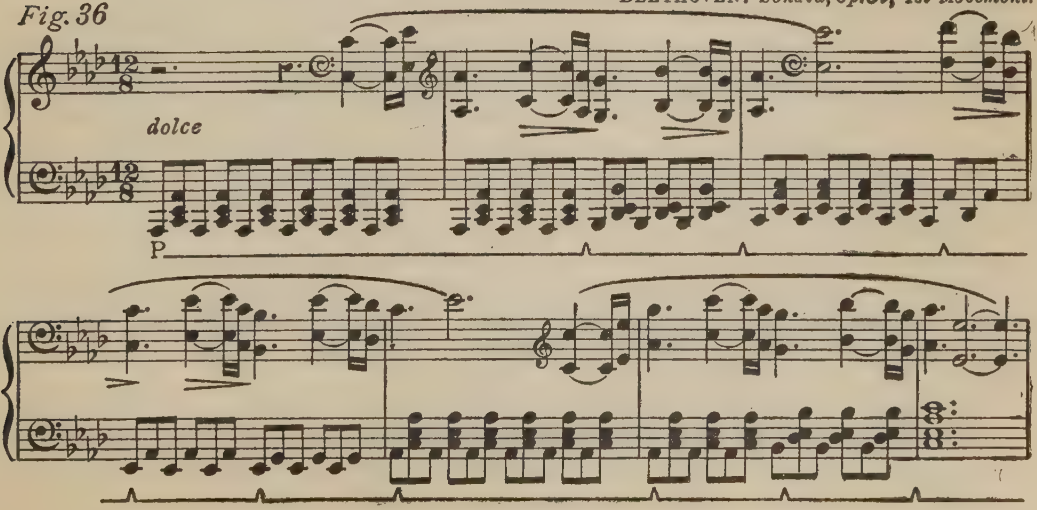
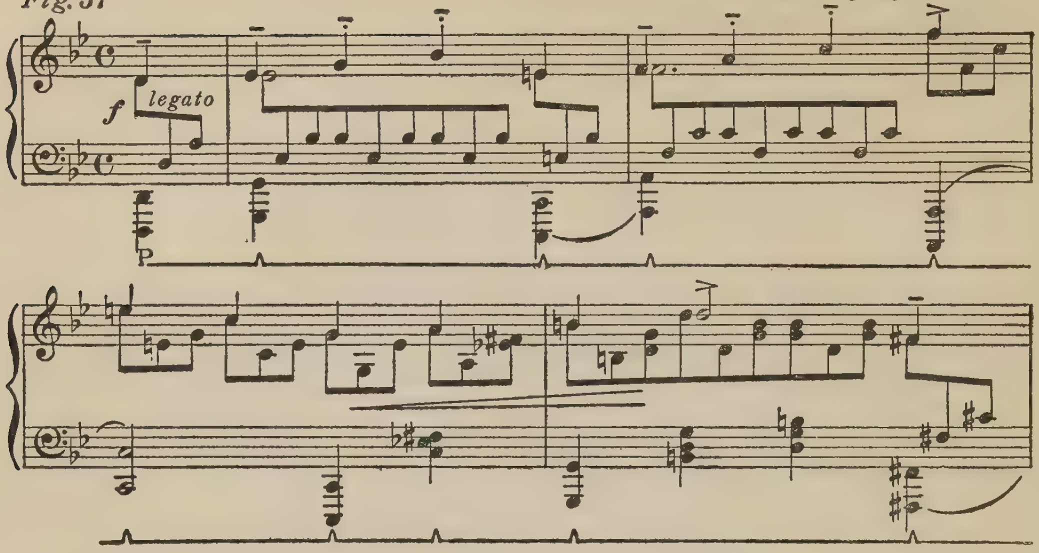


Fig. 37

**Brahms:** *Rhapsody, Op. 79, No 2.*



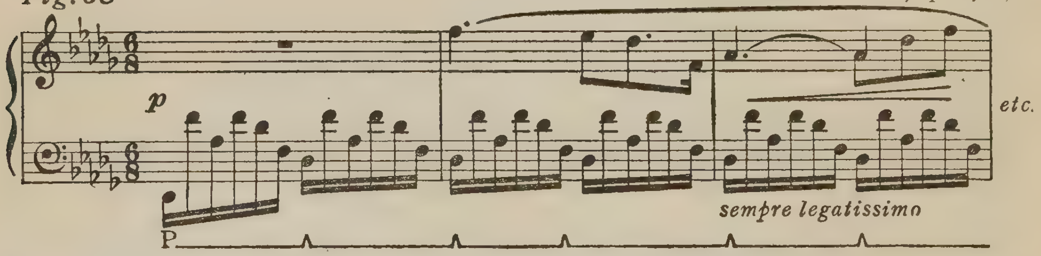
This use of the pedal always calls for careful attention. The important points to remember are (1) that there should be no break in the smooth progression of the sounds, and (2) that there should be no smudge.

### The Effect on Pedalling of Passing Notes.

So far we have considered the use of the pedal only in connection with those passages which are constructed entirely of simple harmonies. A great many passages, however, are obviously not so simply constructed as this. Notes foreign to the prevailing harmony occur, and yet the pedal may still be required. As an example, take the following :—

Fig. 38

**Chopin:** *Nocturne, Op. 27, No 2.*



The passage is clearly built from quite a simple harmonic structure, and yet the note E flat in the right hand of the second bar does not belong. It would be unwise to omit the pedal altogether merely for the sake of this note. Here are some general rules for the use of the pedal when "passing notes" and other sounds foreign to the prevailing harmony are present. Beware, however, of treating these as definite rules which are applicable in every instance. They are merely general, and in nearly every case some experimenting will be required.

(1) Passing notes which occur *in a high register* can frequently be disregarded.

(2) Passing notes *in the bass* tend to smudge; greater care with the use of the pedal is therefore needed.

(3) Passing notes which occur on weak beats can be disregarded more safely than passing notes which occur on strong beats.

(4) Passing notes can be disregarded more safely in soft passages than in loud.

(5) Passing notes which are short in value can be disregarded more safely than those which are longer in value.

(6) Passing notes which are diatonic can be disregarded more safely than those which are chromatic.

### Some Further Uses of the Pedal.

The pedal is not used solely for the purpose of sustaining tone, although this, of course, is its main object. It is used also for beautifying and enriching the tone quality. Try the experiment of playing one chord both with and without the pedal. Notice that you can sustain it perfectly well, but you will notice also that even if in the two cases you obtain exactly the same *quantity* of tone, the *quality* is entirely different in the two instances, that obtained *with* the pedal being much more resonant. Now, it is quite clear that this use of the pedal is very much a question of individual judgment. It can be used or not, according to whether one requires the particular richness produced by the pedal or not. The ordinary principles of pedalling must, of course, be observed—that is to say, we must never produce a smudged effect, and so on. Within these limits, however, there is a wide range for individuality in expression which may be obtained by the use of the pedal for this particular purpose.

Below are some examples in which the pedal may, at the discretion of the performer, be used for the sake of beautifying the quality, although it is not actually required for the purpose of *sustaining* the sounds.

*Fig. 39* CHOPIN, *Prelude, Op. 28, No. 7.*

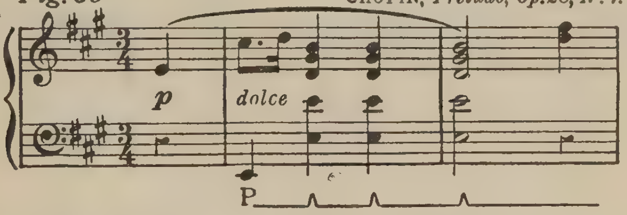


*Fig. 40* BEETHOVEN, *Scherzo, Op. 2, No. 2.*

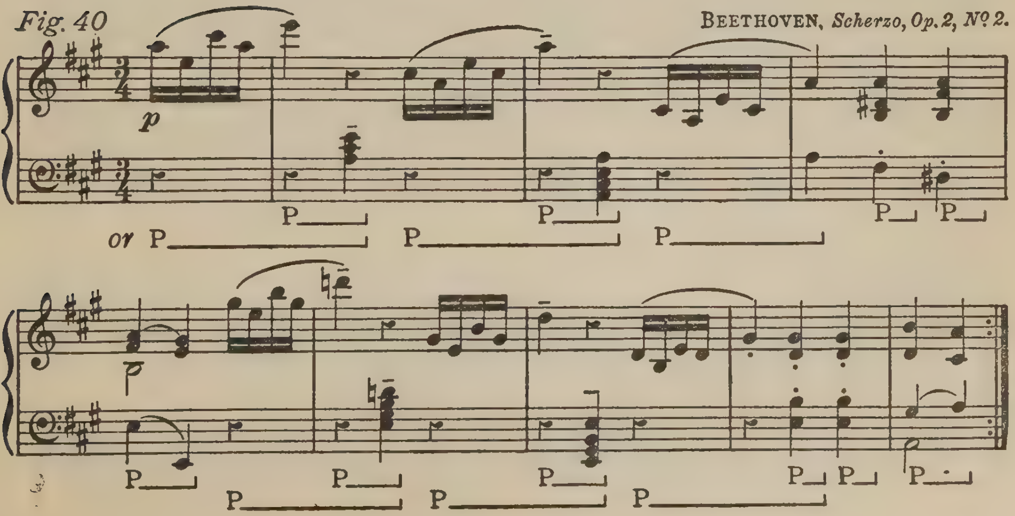


*Fig. 41*

**CHOPIN**, *Valse, Op.34, Nº 3.*

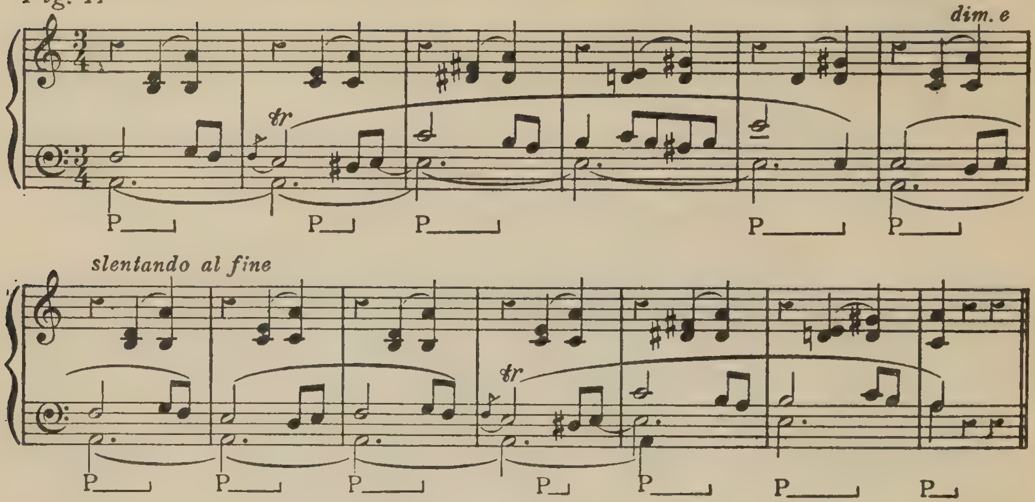


*Fig. 42*

**BRAHMS**, *Intermezzo, Op.76, Nº 6.*

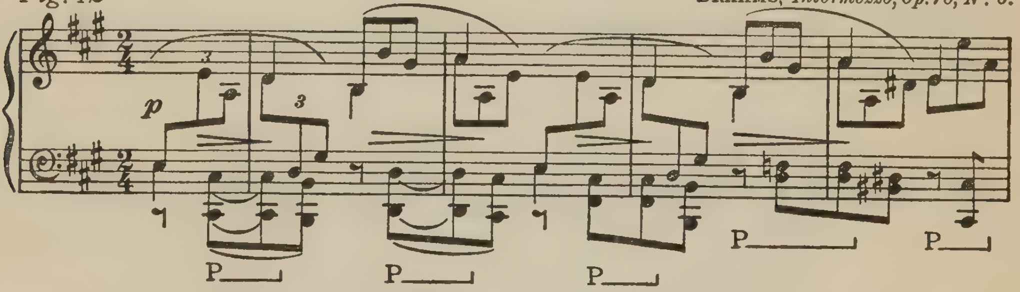


*Fig. 43*

**SCHUBERT**, *Moment Musical, Op.94, Nº 4.*

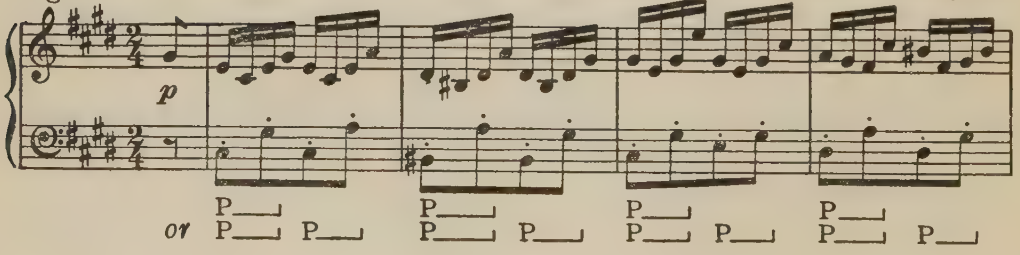
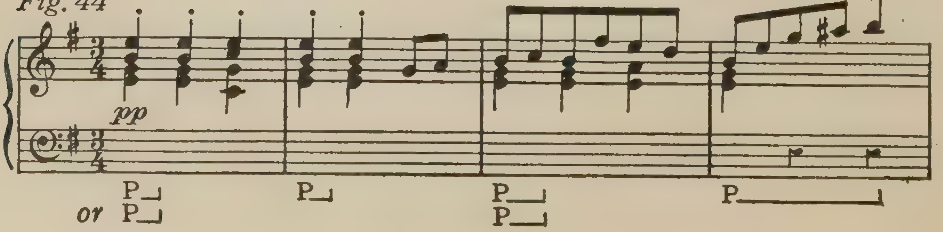


*Fig. 44*

**GRIEG**, *Elfentanz, Op.12, Nº 4.*



### The Pedalling of Scale Passages.

Here, again, only a few guiding principles can be given. In the hope, however, that they may be of some value, I will tabulate them thus :—

(1) Scales played by one hand, which have no accompaniment, should not, as a rule, be pedalled.

(2) Scales in the bass should rarely be pedalled.

(3) Scales, particularly those in treble register which are accompanied by definite chords, or some figure built from a simple chord, are frequently improved by the pedal.

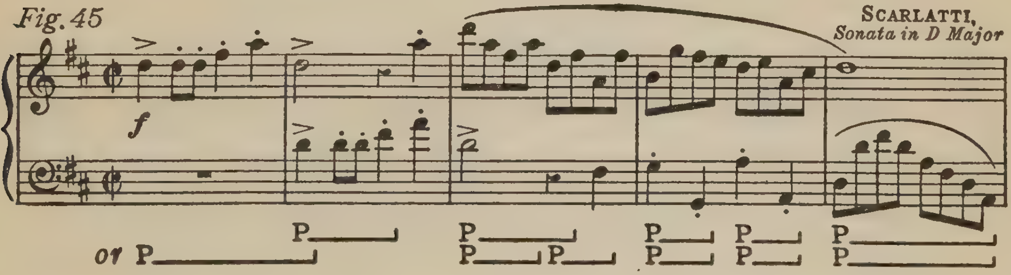
### The Soft Pedal.

The principal use of the soft pedal should not be to make the passage softer, but to alter its quality. It is true that the use of this pedal does make the passage softer, but since it very materially affects the tone quality as well, making it thinner, more muffled, or more veiled, it should not be used unless this particular tone quality is appropriate for the particular context.

### The Pedal and Seventeenth and Eighteenth-century Music.

Music of this period was of course written before the pianoforte as we know it was invented, and the older instruments, the harpsichord and the clavichord, possessed no sustaining device. For this reason, the music written at this period seldom requires sustaining, since the composer, when he wished a passage to be sustained, obviously had to write it so that the fingers could do this unaided. This fact, however, should not be taken to imply that the pedal should *never* be used in music of this period; but it will be seen that its principal use will be for enriching the tone quality rather than for actual sustaining effects. It must also be realised that this early music is usually slighter in texture than most modern music. For this reason, the pedal must never be used if it obscures the clearness of the part writing. The following examples from music of this period illustrate some possibilities for the use of the pedal for colour purposes.

*Fig. 45*



SCARLATTI, *Sonata in D Major*

COUPERIN, *Le Réveil Matin.*

*Fig. 46*

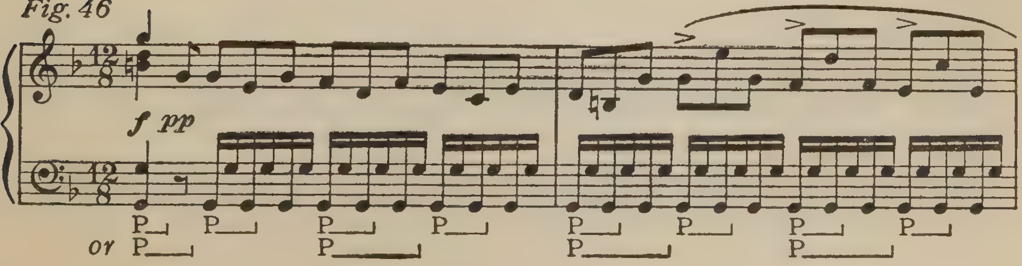


FIG. 46—*continued.*

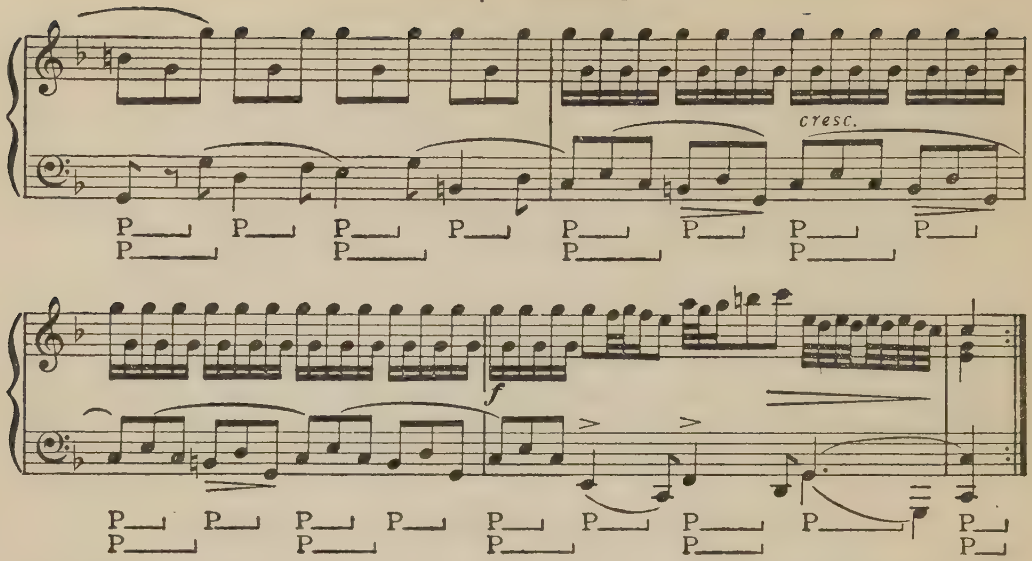


*Fig. 47* **RAMEAU**, *Le Rappel des Oiseaux*

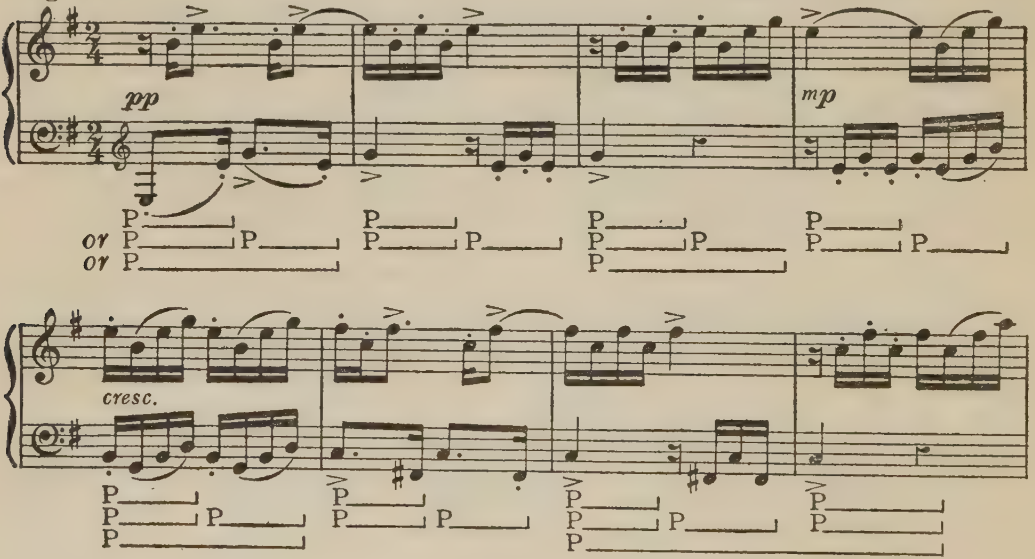


*Fig. 48* **J. B. LOEILLY**: *Gigue in G minor*

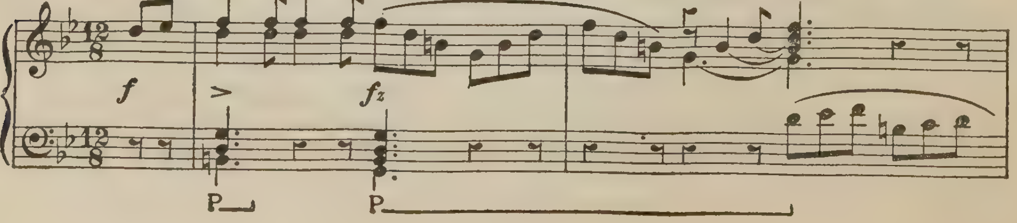


FIG. 48—*continued.*

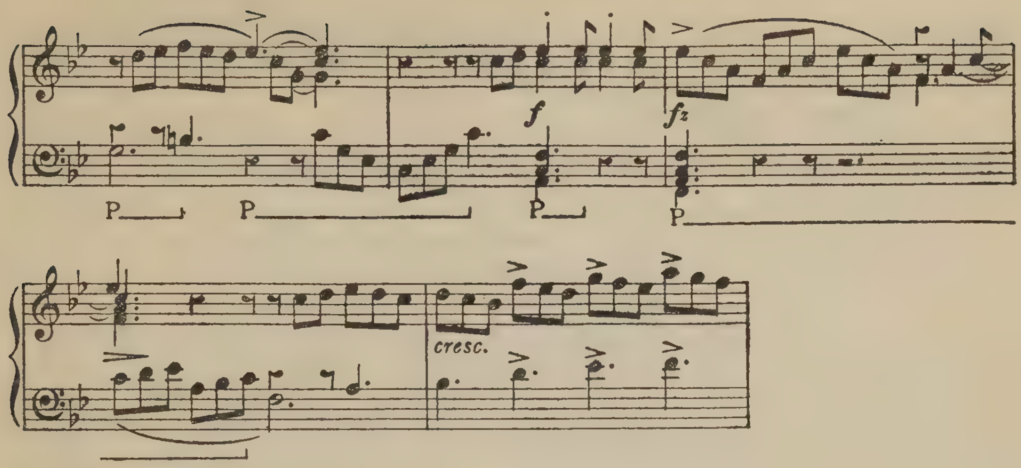


*Fig. 49*

**BACH:** *Prélude in C♯, Book I, 48 Preludes & Fugues*

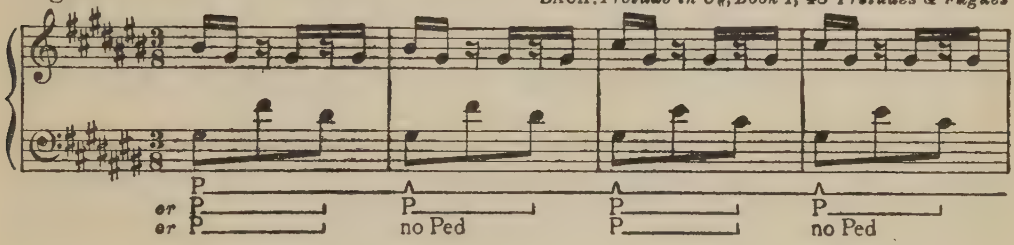


*Fig. 50*

**BACH:** *Fugue in E♭, Book I, 48 Preludes & Fugues*

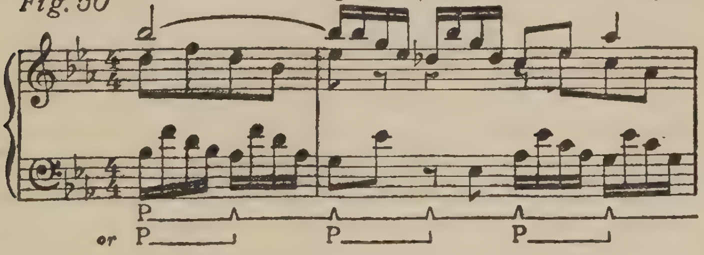
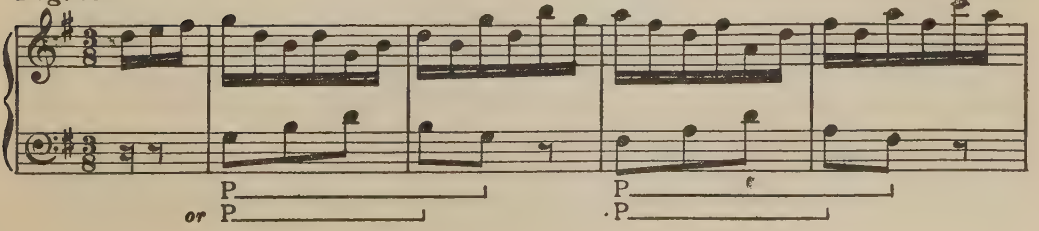


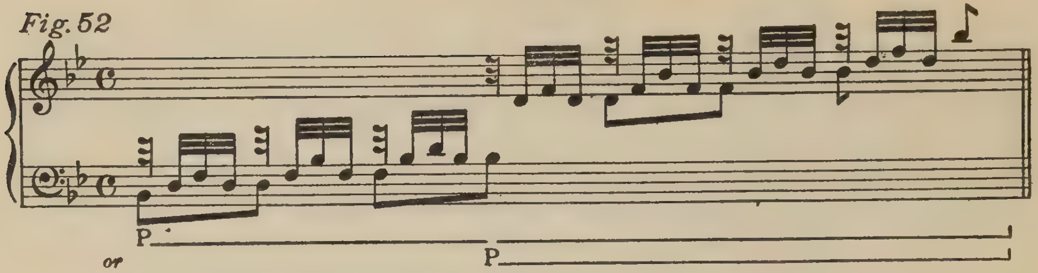
*Fig. 51*

**BACH:** *Courante from Partita in G.*



**Bach**: *Prelude in Bb, Book I, 48 Preludes & Fugues*

*Fig. 52*



## THE HIGH-SPEED ASPECTS OF ARM TOUCH.

### Octaves, Rapidly repeated Chords, Intervals, etc.

The first point to realise in connection with the playing of octaves and all passages requiring a similar technique is that they are *not* played " from the wrist." It is true that since the days of Czerny teachers have taught octave movements as originating from the wrist, but it is equally true that the majority of the great pianists from the time of Liszt (who was himself a Czerny pupil) have played their octaves not from the wrist, but from the arm, and the whole arm at that ! It is interesting in this connection to note that Liszt, although he *taught* octaves as a wrist movement, is described by those who saw and heard him play as " playing octaves as though he were shaking cards from his sleeve." Clearly, with the forearm in the normal piano-playing position, isolated hand movements will not dislodge anything placed in the sleeves. To execute this, at least a forearm movement is necessary, and the most natural procedure would be a *forward* combined with a *downward thrust* of the whole of the arm. A moment's experiment will conclusively prove this.

It is, indeed, this forward and downward thrusting movement which is the basis of all octave technique. This is, of course, the arm movement I have already described, executed at high speeds. As this conception may be new to many, I will, before explaining the movement in any detail, describe briefly some of the reasons for its use in preference to isolated hand movements at the wrist joint :

(1) It is a well-known physiological principle that any specific task is performed with the maximum control and efficiency (*i.e.*, with the least strain) by employing the largest possible muscles. Of the muscles employed in piano-playing those in the shoulder region are generally speaking the largest, and the muscles gradually diminish in size towards the hand and fingers. Wrist movements are largely controlled by comparatively small muscles situated in the forearm. Whole-arm movements of the type I have just described are mainly controlled by much larger and stronger muscles situated in the body and upper arm. Since the amount of mechanical force necessary to do the work of overcoming key resistance must be approximately the same for any one passage of any one degree of loudness or softness, it follows, from the physiological principle which I have just stated, that the most economical bodily movement will be that movement involving the use of the largest possible muscles, or, in other words, some kind of whole-arm movement.

(2) From the point of view of tone control, recent experiments which I have carried out under strictly scientific conditions (that is, under conditions which eliminate all personal bias for or against any particular " method ") have proved that hand movements at the wrist joint give the performer a comparatively poor control of the piano mechanism, whereas forward movements of the whole arm give the maximum control for all degrees of loudness and softness Space prevents me from describing my experiments, since they were numerous and complex. In any case, the difficulty of obtaining real tone control with hand movements at the wrist joint is well enough known. Even experienced players frequently find, particularly in soft passages,

that with wrist movements many of their notes sound either imperfectly, or even not at all. This lack of control is completely eliminated by substituting correct arm movements.

(3) From the point of view of tone quality, it is a well-known fact that a considerable degree of superficial noise is produced by the striking of the fingers against the keys (a series of unmusical taps or clicks) when playing octaves " from the wrist." It has been recently proved that such noises materially affect the actual tone quality of the sounds which we produce. That wrist movements do produce considerable superficial noise is largely due to the fact that the hand, on account of its light weight and the comparative weakness of the muscles controlling its movement, has to be raised a fairly considerable distance above the keys between each octave. By using the heavier weight of the whole arm and the stronger muscles of the arm and body, each key can be played from a point much nearer to the surface level for a tone of any specific quantity, and thus unmusical noises are reduced to a minimum.

(4) From the point of view of capacity for loudness of tone, every teacher and student realises how difficult it is to play rapid octaves *fortissimo* by means of hand movements. This, of course, is on account of the comparative weakness of the muscles controlling this movement. By using larger muscles the loudest tone can quite easily be obtained even in the most rapid passages.

Thus, every important factor in octave playing—viz. the elimination of physical strain, the control of tone, the production of tone of good quality, and the capacity for a wide tonal range—points to the use of arm movements instead of hand-wrist movements. After the most careful and exhaustive research from both the physiological and mechanical aspects, no valid arguments against these conclusions can, I think, be found.

You will now see that this arm movement is the one which I have already described at an earlier stage for the playing of chords and intervals. Its application to octaves is just a specialised use. Here are some preliminary exercises :—

EXERCISE 46.

Adopt a sitting position which gives an angle slightly greater than a right angle between the upper arm and the forearm, and which allows the elbow to be approximately on a level with the surface of the keys (see Fig. 53). Now draw the upper arm backwards and assume the approximate position shown in Fig. 54. The hand and wrist should be relaxed. Now thrust the whole arm loosely and vigorously forwards and slightly downwards, and play any octave with a full *fortissimo* tone. It will be best to commence by choosing an octave somewhere in the treble region for the right hand and in the bass for the left hand, and only repeated octaves of the same pitch should be played. The approximate finishing position is shown in Fig. 53. The following points should be carefully observed in performing this exercise :—

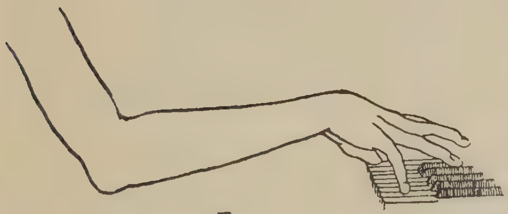


FIG. 53.

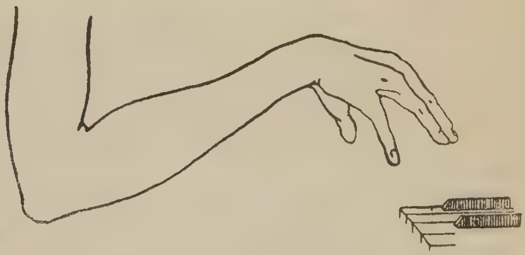


FIG. 54.

(1) The upper arm must move at the shoulder joint, and, moreover, must move *freely* and *vigorously*. The movements must in no circumstances be restricted to isolated forearm movements from the elbow joint. The hand itself must not move separately at the wrist joint. The best conception of the movement is obtained by imagining that someone is standing behind you

and pushing your arm vigorously forwards. You may, indeed, obtain actual benefit by getting someone to do this for you.

(2) The wrist, hand, and fingers prepare for the stroke in a slightly relaxed condition, but they must " firm up " *before* the finger-tips arrive on the keys. At the moment of the impact of fingers with keys, the thumb and fifth finger, together with the wrist joint, must be *absolutely firm*, or weakness of tone and bad quality of tone will result.

(3) Each arm movement must be maintained in all its vigour until the solidity of the keybed is actually felt as a physical sensation by the finger-tips. Only when the upward pressure of the keybed is felt against the fingers should any degree of relaxation take place, and then only if the sequence is slow.

(4) The correct sitting position as described above is of fundamental importance.

(5) Having made the first movement and produced tone satisfactorily, rest for a few moments on the keybed, with fingers, hands, and wrists moderately relaxed (but not absolutely " sloppy "), and then bring the arm back again to the original starting position and repeat the exercise. The tone should be kept at least at *forte* intensity, and if the movements are performed correctly the resulting quality should be full and rich. Any weakness, hardness, or superficiality of tone must be the result of wrong movements or wrong conditions, unless of course the particular instrument on which you are playing is incapable of producing good tone.

(6) Take plenty of time in performing this exercise. Hurried movements or movements carried out without ample preparation and careful preliminary thought will probably be worse than useless. Remember (particularly if this movement is new to you) that you must learn it in the same way as you learn all new movements in all the activities of life. Every new movement must at the start be learned with the full attention and concentration of the conscious mind, until, after sufficient practice, the automatic centres can take over the control and the movements can be performed automatically and correctly.

(7) Do not be afraid in the early stages of playing wrong notes or split notes. At this stage correctness of notes is comparatively unimportant: the chief aim is correctness of movements.

(8) Do not practise softer octaves until the loud ones have been mastered.

### EXERCISE 47.

When Exercise 46 has been mastered, we can commence to apply the same movements to a slow scale passage. Use the scale of C major for some considerable period before attempting scales involving the black keys. Keep the tone *forte* in the early stages of practice, and play slowly (semibreves at the approximate tempo of minim = 60). Use the same deliberation of movement and the same care and thought as in Exercise 46, *and do not be afraid of playing wrong notes.*

The only additional difficulty which Exercise 47 presents over Exercise 46 is the sideway adjustments which the arm has to make in order to play different notes, instead of repeating the same ones. This sideway adjustment necessitates extreme looseness at the shoulder joint, from which joint are carried out not only the forward and backward movements of the arm involved in tone production, but also the sideway movements involved in the playing of different keys.

Points to remember in Exercise 47 :—

(1) Keep the shoulder loose.

(2) Relax the hand, wrist, and fingers whilst drawing the arm backwards in preparation for the following forward movements.

(3) All the points mentioned in connection with Exercise 46.

As I have remarked before, all good technique is dependent upon healthy and strong muscles, We use our muscles in piano-playing for two fundamentally different purposes :—

(1) To produce movements.

(2) To create firmness at a joint or joints in order to prevent loss of power.

The first of these muscular processes requires no special explanation. I will, however, repeat that, within reasonable limits, large and well-developed muscles are necessary in order that octave-playing may be performed without undue strain. The second muscular process does, however, require some more or less detailed explanation, particularly in view of the lack of proper understanding at the present time of the true functions, in piano technique, of firmness and even rigidity.

You will be able to obtain a clear grasp of the fundamentals of this question by performing a simple experiment. Take a fairly long pencil, preferably one with a rubber cap or tip on one end. Hold the other end firmly, with the thumb placed over the top, and obtain a graded series of sounds (from *pp* to *ff*) by means of repeatedly striking one key with the rubber end of the pencil. Aim the pencil deeply into the keys. You will probably be surprised at the good quality of the tone and also at the excellence of the control which you will obtain, always provided that you grasp the pencil firmly enough and aim it deeply enough into the keys. In all probability you will find that you will obtain more control with the pencil than you normally do with your fingers! Now try for a moment to imagine that you are performing the same experiment with a different instrument—not a solid and unyielding instrument such as the pencil, but one with hinges or joints within its length, which bend, buckle, or crumple when pressure is applied to either end. It is impossible to imagine being able to obtain the same degree of control with such an instrument. Yet our arm is in reality very similar, but with this large difference, viz., that we can, at will, prevent any of our joints from bending or crumpling by correct muscular action, and thus we can temporarily turn any portion of our arm into a solid and unbendable tone-producing instrument. Thus, when we are pushing a heavy piece of furniture, we instinctively strengthen (firm up or stiffen) the wrist, elbow, and shoulder joints. We do this, of course, without any conscious thought, since we could otherwise make little or no use of our potential strength.

In piano-playing, however, there has been so much talk in recent years about looseness and relaxation, that we are apt to lose sight of the essential factor of firmness in the right place and at the right time. In playing octaves, for example, if we do not keep the wrist, knuckles, and finger joints absolutely firm just *before* and *during* the time we are actually moving the keys, we cannot control the tone properly, and most of our strength is wasted in the crumpling and bending of our joints, instead of being used for the purpose for which we require it. Relaxation in piano technique is really an "after effect," a "letting go" of tension, after sound has been produced, whenever there is time to allow this to take place.

The act of effectively strengthening or firming our joints requires fairly strong muscles, and may very possibly require a certain amount of practice. In octave-playing, firmness is required at the wrist, at the large joint at the base of the thumb (where the latter joins the hand), and at the knuckle and finger joints of the fifth (or sometimes the third or fourth) finger. Unfortunately, the particular muscles which act on these joints in order to make them firm do not, in many cases, get a great deal of use in ordinary everyday life, and are thus liable to be flabby and slow in response. The pianist should therefore practise special exercises for the purpose of strengthening these muscles. The following exercises should be performed frequently, but with intervals of rest of at least an hour between each period of practice. No exercises should be given more than six to eight repetitions in any one period of practice.

EXERCISE 48.

Stretch the thumb outwards away from the first finger. Now slowly bend it inwards and try to touch the bottom of the little finger with the tip of the thumb. Stretch back the thumb again and repeat six to eight times. The fingers should be bent backwards approximately level with the back of the hand.

EXERCISE 49.

Bend the little finger until the tip touches the palm of the hand at a point about midway between the knuckle and wrist. Now press the tip of the finger firmly and vigorously into the palm of the hand, maintain the pressure for about two seconds (not longer), bend the finger back again and repeat six to eight times.

EXERCISE 50.

This is somewhat similar to Exercise 11, p. 9.

Take the rubber ball used in Exercise 11, place it in the palm of the hand, and hold it there by means of the cup-like hollow formed by the hand (see Fig. 7, p. 9). Now place the forearm into the normal piano-playing position, and, whilst still keeping the ball held tightly in the hand, notice the general shape of the hand, fingers, and knuckles. This is approximately the correct hand formation for all octave technique, with the slight difference, of course, that the thumb and fifth finger are stretched a little more widely apart when actually playing octaves. The important points to notice are :—

(1) The high arch of the knuckles.
(2) The feeling of firmness across the knuckles and the back of the hand.

This position and sensation of firmness are both essential, and the appearance of the hand and the sensation should be gradually memorised by constantly repeating the exercise.

EXERCISE 51.

Sit at a table of about the same height as the piano keyboard, and, whilst holding the ball as described in the exercise above, place the tips of the fingers on the table and press firmly downwards. Be careful that this pressure does not cause the slightest bending or crumpling of wrist, knuckle, or finger joints, which must brace themselves to meet the strain caused by the pressure. Maintain the pressure for about two seconds—then release and repeat six or eight times.

EXERCISE 52.

Without the ball, but with the same arched position of the hand, repeat the foregoing exercise, still using a table, with the thumb and fifth finger approximately at the stretch of an octave. Also practise this exercise with the fourth and third fingers substituted for the fifth.

It is important to realise that *whatever* the technique employed in octave passages, there must always be *two distinct movements*—one movement to play the octave, and the other, necessarily a reverse movement, to release the keys and to get into the position for the playing of the following octave. In wrist technique these movements are largely vertical, but in the arm technique I have described they are decidedly more horizontal in aspect. In wrist technique it is necessary to keep a flexible wrist, but with arm technique it is flexibility of the *shoulder* which is all-important. Indeed, muscles governing the various actions of the upper arm (which are situated in the shoulder region of the body) are some of the most important in all technique, and freedom at the shoulder joint is almost more important than freedom anywhere else. Unfortunately, even in these days of " relaxed " methods of teaching, most pianists suffer from shoulder stiffness, which is responsible for more lack of general facility than almost any other pianistic evil.

The movements of the upper arm at the shoulder joint are responsible for the majority of chord-playing (or at any rate should be with the correct technique), and *must*, no matter what the technical system, be responsible for all lateral adjustments up and down the keyboard. It is, in fact, impossible, unless the body is moved, to move beyond the five-finger group in either direction without involving muscles in the shoulder region of the body and using movements of the upper arm in addition to movements of the forearm. Ask your doctor !

In the early stages it is of extreme importance to test frequently for shoulder suppleness. Whilst you are actually playing, ask someone to take hold of your upper arm and try to move it suddenly and vigorously in any direction—forwards and backwards, and also in a circular direction. You will probably be astonished at the amount of resistance they will find ! Some of the gymnastic exercises I have already described are specially designed for shoulder flexibility.

Here is a special exercise for developing high speeds in arm movements.

EXERCISE 53.

Sit in a chair adopting the arm position shown in Fig. 55. Now move the arms (either separately or together) to the position shown in the dotted lines, and perform a series of continuous movements to and fro with no stops between. The movements should at first be fairly large and moderately slow, but they should gradually be *increased* in speed and *decreased* in size until they take the form of a kind of trembling (but a trembling which is under control instead of being spasmodic and involuntary). Be very careful to make the forearm move in an almost flat plane and not upwards and downwards (which may at first be the tendency). This exercise should be practised frequently for brief periods. You will find that in quite a short time you will be able to execute these movements just as quickly, but with considerably less strain, than formerly you were able to execute hand movements. At high speeds this exercise will probably produce after a certain time a feeling of tightness in the muscles of the upper arm, together with a mild feeling of strain. This is unfortunately inevitable, since all really rapidly repeated movements involve rather intense muscular contraction, and hence some strain. This we cannot help—it is the way the human body works. We can, however, minimise the strain by increasing our muscular strength (exercises for this have already been given) and by throwing the strain into that portion of the body which is best adapted by nature to bear it with the minimum of discomfort and fatigue, and with the least harmful physiological effects.

The system of octave-playing advocated above transfers the strain from the weak forearm muscles (everyone knows that forearm tiredness and even cramp frequently occur with "wrist" octaves) to the much stronger upper arm muscles and the body muscles which work in conjunction with them. Thus, apart altogether from the factor of nicety of control, arm movements are carried out with less fatigue and can be continued for a much longer period without real tiredness or cramp.

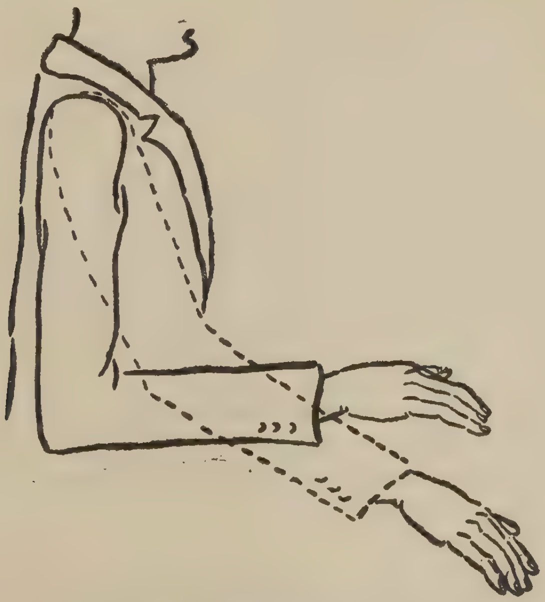


FIG. 55.

Here is a keyboard exercise for combining practice in shoulder freedom (the to-and-fro movements of the upper arm) with the sideway movements necessary in order to play a series of octaves of different pitch :—

Exercise 54.

Using very flat movements similar to those described in the experiment of rolling a pencil along the leg (described previously), play the scale of C major slowly in octaves, using the thumb and fifth finger for each octave. Remember to use the arched position of the hand and keep the wrist, knuckles, and finger joints firm. The first octave should be played by a forward pushing movement, the finger sliding forward along the keys during and even after key depression. The second octave should be played by a backward pulling movement. This pulling movement should be *commenced* from a position well forward on the keys (the position arrived at *after* the pushing movement), and the fingers should slide backwards along the keys during and possibly after key depression. The third octave should again be played by a forward pushing movement, the fourth by a backward pulling movement, and so on.

To begin with, a slight pause may be made between each octave, but later the pushing and pulling movements should be made without any definite break, and the speed can be increased to that of semi-quavers at the tempo crotchet = 60.

This exercise is primarily intended to assist flexibility at the shoulder joint, but actually the pulling movement is frequently used, for example, when playing an octave on white keys immediately following an octave on black keys. It is also employed to some extent for *very* rapid octaves, the technique of which will be described later. The following points should be remembered when practising this exercise :—

(1) Keep the general scope of the movement as flat as possible.

(2) Allow the fingers to slide to and fro along the keys.

(3) Aim each movement deeply into the keys.

(4) Keep the hand arched, and the wrist, fingers, and knuckles firm. At slow speed, relaxation can take place between each movement. At high speed, the condition of firmness should remain for the duration of the exercise.

(5) Keep the shoulder loose and free.

(6) Avoid any separate and isolated movements at the wrist joint.

(7) Obtain a good full tone, every note sounding clearly and distinctly.

This exercise should be practised with all kinds of tone from *pp* to *ff*. It should also be practised at various speeds and with *crescendo* and *diminuendo* effects.

Now for an attempt to increase the speed of your octave and rapid chord technique. The chief problem in high speed is the elimination of fatigue. Fatigue is minimised firstly by developing muscular strength, and secondly, in the case of octave technique, by constantly changing the angles between the various portions of the arm. Let me give you an example. If you play an octave with the wrist in a low position, and then follow it by playing one with the wrist in a high position, the muscular co-ordinations are different for the two different positions. This means that a certain amount of the muscular system used in the one position will be given a rest whilst the other position is being used, and *vice versâ*. Thus, with properly controlled changes of position, muscles (or at any rate portions of muscles) are allowed regular periods of rest, which enable them to recuperate from their previous exertions and to be fresh to assume work at a later period. In this way the onset of fatigue and cramp can be delayed almost indefinitely.

Here are some keyboard exercises to help you with this principle:

Exercise 55.

Play a series of repeated octaves of the same pitch moderately slowly (crotchets at crotchet = 60). The first octave is to be played by the backward-pulling movement of the whole arm, the wrist being allowed to drop as the keys are being depressed. The second octave is to be played by the reverse of the movement—a push forwards of the upper arm, the wrist rising during key depression. Fig. 56 shows the two extreme wrist positions. The third octave is played with a pull and a dropping wrist, the fourth by a push and a rising wrist, and so on. Notice that the finger-tips need not change their position much (if at all) relatively to the keys.

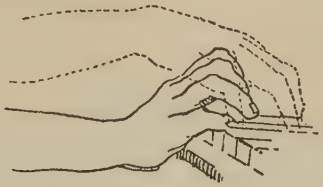


FIG. 56.

It is important in this exercise not to allow the movements to degenerate into isolated wrist movements. The motive-power is still the push and pull of the upper arm, the wrist movements being entirely subsidiary to these larger and more powerful movements. Practise this exercise slowly at first, gradually increasing the speed to semiquavers at the tempo crotchet = 60.

In really fast octave passages it is fairly obvious that large changes of wrist positions are impracticable with every octave. In such passages we must therefore learn to graduate our change of wrist position in order that high speeds may be obtained without clumsiness of movement. Most rapid octave passages can be analysed into rhythmic groups of threes, fours, or sixes (the latter being treated from the point of view of movements as double triplets). Let us examine the necessary movements for octave passages which are grouped in threes. We will consider for the present the playing of repeated octaves of the same pitch in regular series of threes.

EXERCISE 56.

The *first* octave of each group is played with a backward pull of the upper arm and a dropping wrist, as described in the previous exercise. The *third* octave of each group is played with a push forward of the arm and a rising wrist. The *second* octave of our three group is also played with a push forward of the arm and a rising wrist; but for this second octave the wrist will rise only as far as the level wrist position, *i.e.*, with the back of the hand and the forearm in approximately one straight line. The third octave commences from that level position and rises to full wrist height. Practise this exercise slowly at first, gradually increasing the speed up to quavers at the tempo dotted crotchet = 100.

In groups of four notes the same general principle is applied :--

First octave—arm pull and dropping wrist.
Second octave—arm push and very slightly rising wrist.
Third octave—arm push and a still further slight rise of the wrist.
Fourth octave—arm push and a still further slight rise to finishing position.

On the first octave of the next main group of four, the arm pull with the *full* wrist drop takes place again, and so on.

Notice that whereas the wrist drops to its full extent from high to low position between the last octave of one group and the first of the next, the *rise* of the wrist is a much more *gradual* process, extending between the first and last octaves of each group. One of the chief difficulties of this exercise will be to prevent the wrist from rising too high immediately after a drop (*i.e.*, in the playing of the second octave of a group). Practise slowly at first, and gradually increase the speed to semiquavers at the tempo crotchet = 92.

In all these exercises it is most important to prevent the movements from becoming isolated at the wrist (*i.e.*, with stationary forearm and upper arm), to keep the shoulder joint absolutely free, and also to feel that the upper arm is the real source of motive power for the technical process.

The following rhythmic patterns should be used :—

*Fig. 57*

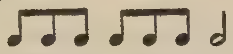


*Fig. 58*

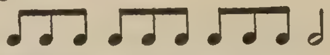


*Fig. 59*

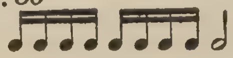
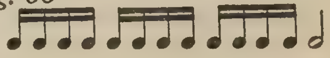


*Fig. 60*



*etc.*

Gradually add to the number of the groups.

Complete relaxation should be obtained between each repetition of these exercises by withdrawing the arm from the keyboard and allowing it to hang loosely from the shoulder and then to swing to and fro in the same way as one allows it to swing in the act of walking. Later, relaxation should take place without actually withdrawing the arm from the keyboard. It is intended that these exercises should be practised at the commencement with octaves of the same pitch.

We have now to learn to apply the principles of the pushing and pulling of the arm in combination with the rising and falling of the wrist to octaves of different pitch, for example octave scales and similar passages. The fundamental principles are precisely the same as those outlined for the playing of repeated octaves of one pitch. The only added complication is the sideway movements of the upper arm required to transfer the thumb and fingers from one key to another. Practise scales or portions of scales, using the same movements as already described, as follows :—

EXERCISE 57.

The octave technique I have just described is suitable for all fast or moderately fast octave passages. There is, however, another type of octave technique which gives even higher speeds and more brilliant effects. This is called the vibration technique. Unfortunately, it involves greater physical strain than the technique just described, and for this reason it can be employed only for short passages (*i.e.*, passages which do not consist of say more than eight to twelve octaves in succession without some slight pause for rest and relaxation). Thus it is useless for really extended octave passages, but it is of such importance in short, extremely rapid and brilliant groups of octaves, that it must form a part of every pianist's technical equipment. The name " vibration," which is usually given to this form of technique, supplies a clue to its general nature. The technique consists of making the arm vibrate (to and fro) very rapidly by means of abnormally excessive contraction of muscles in the upper arm and shoulder. Without such abnormal contraction the maximum speed of movement of which the arm is physiologically and mechanically capable is impossible. Hence the strain, and hence its somewhat restricted use.

Briefly, the technique may be described as a series of arm pushes as described above without the regular occurrence of an arm *pull* to eliminate the fatigue. It is somewhat similar in general scope to the movements which would be instinctively performed by making with the knuckles double, triple, or quadruple knocks on a door. It is performed more naturally by animals and insects (the dog shakes its coat free from water by vibration, and the wings of all the hovering insects work on the same principle) than by human beings, who, though they can acquire the knack of it by practice, have little or no call for it in everyday life.

The best way to start to acquire this technique is to practise rapping very quickly on a door with the knuckles, using the rhythmic patterns illustrated in Figs. 57–60.

Vary the accentuation, sometimes making the strongest rap on the first of the group and sometimes on the last. Make the raps follow one another as quickly as possible. You may notice in the prolonged groups a feeling of tightness extending from the wrist to the shoulder. This is unfortunate, but inevitable. The moment you try to make the raps with a relaxed arm and wrist you will find that the speed decreases. You cannot acquire your maximum speed together with looseness—the two conditions are mutually antagonistic. Practise relaxing fully, however, *between the playing of each group*. When you have acquired some facility in door rapping, the same principle must be applied to the keyboard.

Start by playing repeated octaves of the same pitch, using the rhythmic patterns just described.

The following points must be carefully noted :—

(1) Start by playing moderately slowly, thinking carefully about the playing of each octave.

(2) Do not make the movements larger than is absolutely necessary. Remember, the bigger the movement the longer time it takes to execute. In really fast groups the tips of the fingers do not rise above or away from the surface level of the keys.

(3) The first octave of each passage must, however, be played by a big arm movement with plenty of vigour. The energy contained in the first large movement helps in the smaller movements which follow the first.

(4) The wrist and knuckles should be *rigid throughout the whole passage*. The sensation of tightness and strain in the forearm and upper arm is not present at the beginning of the group, but develops gradually and tends to increase as the passage proceeds.

(5) Relax completely *between* the playing of the passages.

(6) Each movement must actually be a push forward of the whole arm, and must be conceived in this way whilst practising slowly. In very fast playing the arm movements are so minute that they almost seem to be non-existent—they are, in fact, a vibration.

When proficiency has been obtained with repeated octaves of the same pitch, practise with the same rhythmic patterns, using portions of a scale or complete scales instead of octaves of the same pitch. Try to keep the shoulder joint loose as far as sideway movements of the upper arm are concerned.

### The Psychological Aspect of High Speeds.

The ability to execute really fast movements is the result of (1) correct movements involving correct muscular co-ordination and (2) correct thinking. The former we have discussed at some length. The latter is equally important, and I shall now devote some space to its consideration.

Actions which we do deliberately, and with the whole attention and consideration of the conscious mind, cannot be performed either so fluently or so rapidly as actions which are controlled subconsciously or, if you prefer the term, automatically. Two examples from everyday life will prove this clearly. When we read English aloud, our eyes do not notice each word separately and individually—we see words in groups and realise their meaning in a similar way. In this way we read fluently, fast, and sensibly. If, however, we look at each word separately and think consciously about its pronunciation, our reading is slower, stilted, and may even sound nonsensical! In writing, if we think deliberately how to form each individual letter making up the words we write, we shall find our writing speed lessened probably by at least one-half. At the same time, we were forced at one time to learn the actions of both reading and writing as a slow, laborious, conscious effort. Eventually, by sufficient practice we are now able to control these actions automatically, and, moreover, by doing so we increase their efficiency and speed.

So it is with high speeds in piano-playing. Correct actions must first of all be learned in the same way as all other skilled actions have to be learned—slowly and deliberately, and with the whole attention of the conscious mind centred upon them. When, after sufficient practice, correct movements become more and more facile, we should attempt deliberately to " think " less and less about them and allow them, so to speak, to " do themselves." Inexperienced pianists usually make either or both of the following fatal errors :—

(1) They practise new movements, exercises and pieces too fast at the commencement, and thus the conscious mind cannot properly control the processes involved.

(2) They continue to think consciously about the playing of each note long after the actions involved should be performed automatically.

Either of these errors will hinder efficiency and impede progress. Both will probably result in that state of depression which so many keen and conscientious students experience, even though they spend hours and years at the piano.

In the playing of fast octaves, after sufficient slow practice with conscious attention on every movement has been given, it is advisable to think consciously about the playing of only the first octave of each group, and then try almost deliberately to forget about the playing of the remaining octaves of the group, and (as it were) allow the body, and not the mind, to be in control. I would emphasise again that if this latter procedure is adopted too early, *i.e.*, before sufficient slow practice has been done, partial or complete failure can only be the result.

The psychological methods for the fast octave techniques I have described in this article are roughly as follows :—

(1) In the technique which consists of both pulling and pushing movements, think consciously about the pulling movement and let the pushing movements take care of themselves.

(2) In the vibration technique, think consciously about the first octave of the passage (no matter how long it may be) and let the rest of the passage take care of itself.

It is important, however, that the whole rhythmic pattern of the passage should be in the mind before commencing.

## The Technique for Other Rapidly Repeated Intervals (Sixths, Thirds, etc.) and Rapidly Repeated Chords.

The technique for passages of this description is exactly similar to the various types of octave technique described in this course. Two examples will suffice :—

(1) Beethoven Sonata, op. 2, No. 3. The last movement of this sonata commences with a very rapid series of chords. The first passage is a little too long for vibration technique, hence we shall play the first chord of each three-group with a pull of the arm and a dropping of the wrist, and the second and third of each group with a push of the arm and a gradual rising wrist.

(2) Chopin Polonaise in A Major (the " Military " Polonaise). In the last crotchet beat of the first bar (including the first chord of the second bar) and similar places, a brilliant sharp rhythmic effect is required. The passage is short enough for vibration technique, and hence " push " movements will be entirely used, the whole group being played as a result of one mental impulse.

### *Small Hands.*

Small hands are naturally an obstacle to good octave-playing. The stretching power even of an adult, however, may be considerably increased by :—

(1) Regularly practising the stretching out of the fingers without mechanical aid.

(2) Practising the opening out and stretching of the fingers of one hand by means of the fingers of the other.

(3) By regular massage of the " web " at the base of the fingers.

Great care must be taken to avoid undue strain, but unless the bony structure of the hand is at fault, the average adult should be able, by these means, to add at least one note to the stretch in the course of about a year.

## General Summary.

(1) All tone production requires firmness of the lever which produces the tone. In octaves this lever is the whole arm. Thus the finger, knuckle, and wrist joints must be absolutely firm,

from the time just before the finger-tip reaches the key until the time when the finger-tip reaches the keybed. This firmness usually requires conscious attention in the early stages. Conditions at elbow and shoulder do not need such attention. These joints almost invariably take care of themselves. Relaxation can and should take place in finger, knuckle, and wrist joints between the playing of each octave, if the passages are slow enough to permit of this. When octaves are more rapid than (say) quavers at crotchet = 60, firmness of finger and knuckle joints should be permanent for the duration of the passage for all types of technique. In *vibration* technique, the wrist, since it does not change its relative position, should continue in permanent firmness. In *non-vibration* technique (*i.e.*, the alternate pushing and pulling movements) the wrist is constantly changing its position, and greater flexibility is obviously necessary. After sufficient slow practice of correct movements in this latter technique, wrist conditions will largely look after themselves. Finger and knuckle joints may, however, require attention for some considerable period.

(2) Rigidity maintained over a prolonged period of time; flexibility; and the ability to execute rapid and repeated movements of any kind without undue strain, all require well-developed and healthy muscles. For this reason, do not neglect the gymnastic exercises away from the keyboard outlined in this article.

(3) No physical movement incurred in tone production should lose energy or speed until the solidity of the keybed has been felt as a definite physical sensation by the tips of the fingers.

(4) Remember that in fast technique the larger the movements the less is the potential speed, and vice versa. Nearly every student takes the finger-tips a great deal too far away from the surface level of the keys between each octave.

(5) Movements which are *new* to the student should, however, be exaggerated in size and made quite large *in the early stages of study*.

(6) The correct psychological aspect of high speed is equally as important as the correct physical movements.

(7) If this technique is new to you, remember that you will not only have new movements to learn, but old habits to unlearn. Do not expect a brilliant and fluent octave technique without considerable effort. Try to practise daily, if only for a few moments. When you begin this work, allow yourself six months for the acquisition of a really fine octave technique. As I have already pointed out, this is after all a short period out of a lifetime!

## SIGHT-READING AND MEMORY TRAINING FOR KEYBOARD PLAYERS.

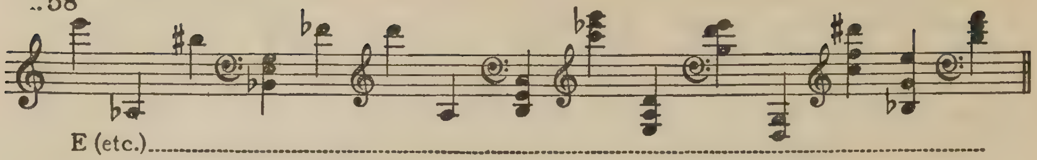
The necessity for good sight-reading amongst musicians is so obvious that it needs no further comment. The ability to read well at sight depends firstly on the power of the performer to recognise instantly, without any conscious thought whatever, the names of all the musical symbols in our notation; and secondly, the ability to translate instantly these symbols into the correct keyboard positions. Do not be insulted if I suggest that possibly you may not "know" your notes. There are, after all, many degrees of "knowledge." Test yourself by means of Exercises 58, 59, and 60.

It is most important that you should not even glance at these exercises until you are ready to carry them out as tests for your knowledge of notation.

### Exercise 58.

This consists of a series of isolated notes. Without any preparation whatever, write as quickly as possible underneath each its correct letter name, and time in seconds exactly how long the whole process takes you. The time taken by a good sight reader is approximately 50 seconds. If you take much longer than this, you do not "know" your notes.

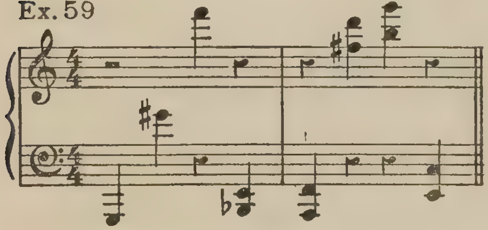
..58



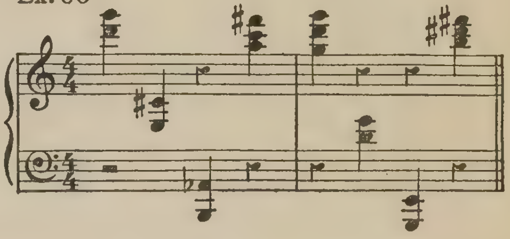
Exercises 59 and 60.

These are keyboard exercises. If your knowledge of notes is sound, you should be able to play them perfectly, at first sight, at about crotchet = 60. Set your metronome at crotchet = 60 before you start, in order that you may have a rough idea of the speed at which to attempt the exercises. Notice how many you do perfectly, and how many imperfectly. If you fail to keep strict time at the pace set, this should count as a mistake. Any good sight-reader ought to be able to do this exercise perfectly.

Ex. 59



Ex. 60



### Reading Ahead.

In order to sight-read well, you must be able to look and read ahead. Most people realise this, but few train themselves in order to improve their capacity in this respect. A little thought will show you that this process of looking and reading ahead involves memory. Suppose that you are all the time reading exactly a bar ahead of the actual bar which you are playing. It follows if you are reading, for example, bar 3, and playing bar 2, that you must be playing bar 2 from memory, because your eyes are not reading the notes in bar 2, but the notes in bar 3, and so on throughout.

### "Sight-Memorising."

In contrast to most forms of memory, in which proficiency is acquired by some kind of repetition, the memorising involved in sight reading has to be accomplished in one operation, and that a remarkably quick one. I call it "sight-memorising," and the greater your ability to "sight memorise" the greater will be your ability to sight-read. It is most important for you to develop your powers in this respect to the utmost.

Figs. 61–66 consist of short fragments of simple music. Memorise each one of them in turn, merely by looking at them, *not by playing them.* You should try to spend not more than about five seconds in memorising each exercise, and the less time you spend (consistent always with accuracy) the better. Then, having memorised an exercise in this way, look away from it and play it from memory. A certain amount of time should be given each day to perfecting this process. When you have worked these exercises, select portions of other music which you have by you; anything will do—children's pieces, the accompaniment of songs, and so forth. Choose the most simple music to start with. Regulate the length of the sections to be memorised by not allowing yourself more than about five seconds for each section. The music you select should of course be music you do not know, and if it is very difficult, you can work on the basis of each hand separately.

Fig. 61

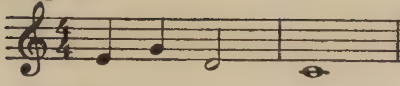


Fig. 62

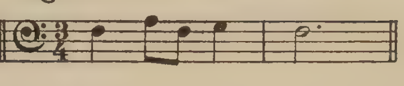


Fig. 63

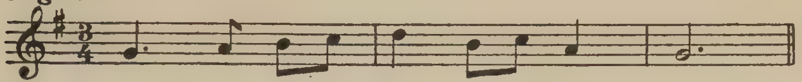


Fig. 64

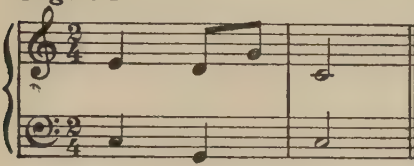


Fig 65

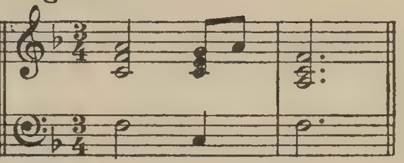
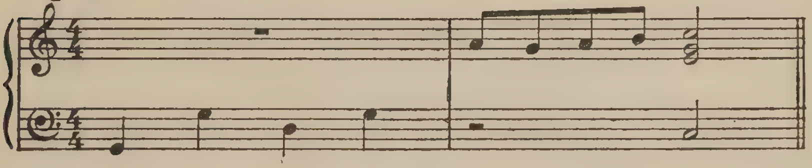


Fig 66



### A Few Hints.

Endeavour at first, not to *increase* the length of the sections, but to *decrease* the length of time necessary for memorising them. The length of sections, and even their difficulty, are, to start with, comparatively unimportant. The really important points are speed and accuracy. Do not worry if at first you find work of this kind extremely difficult. After a few days you will notice an improvement in your capacity, provided that you concentrate all the time you are working. Above all, do not expect to see a great deal of improvement in your general sight-reading as an immediate result. Improvement can come only with time. Realise (if you have never thought or worked on these lines before) that, though you may be a good musician in other ways, you may be as a child in these particular mental processes.

*Do not be impatient.*

### General Training in "Sight Memory."

Exercise 61.

Select four ordinary playing-cards, choosing four different suits and four different denominations—for example, the three of Clubs, ten of Diamonds, Ace of Hearts, and Jack of Spades. Shuffle them and quickly glance at their order. Look away, and then say aloud the names of the four cards in their direct order. Check your results by looking at them again, then reshuffle and repeat the process. Gradually increase the difficulty of this exercise by adding to the number of cards, until eventually you should be able to remember the order of six to ten cards, with only a moment's glance. The mental processes involved in this exercise are almost exactly similar to those in the "sight-memorising" of music, and you should devote any odd moments you can to practising it. Notice your ability and the progress that you make. A variation of this exercise can be obtained by taking a large number of cards—say, ten or twelve. After glancing at them quickly, try to remember as many of them as possible, though not necessarily their correct order. Do not spend more than about five seconds in each process of memorising. Endeavour also to continue to train your powers of "sight-memory" outside music by remembering, if only for a short time, everything fresh which you see—the names of streets, telephone numbers, addresses, etc.

### A Valuable Exercise.

Exercise 62.

After glancing for a few moments at any page of your morning newspaper, write down from memory as many of the headlines as you can. Check your results and tabulate them as follows :—

| | 1st Day | 2nd Day | 3rd Day | 4th Day | 5th Day | 6th Day |
|---|---|---|---|---|---|---|
| Number of headlines on the page | | | | | | |
| Number remembered correctly. | | | | | | |
| Number partially remembered . | | | | | | |
| Number forgotten . . . | | | | | | |

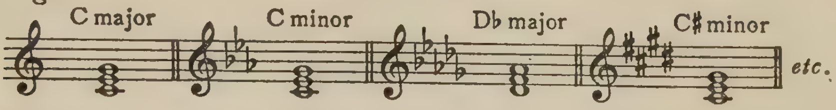
### Harmony.

Facility in one of the principal mediums of music—that is, chords—is very necessary if you are to become a good sight-reader. You have become facile in the use of the spoken English word merely because you have spoken it so often and have realised its meaning whenever you have spoken it. If you had merely read your English aloud from a book, and never expressed yourself by means of your own thoughts, your English would not be such a live thing as it is, and your reading aloud would not be so good. The exercises which follow may appear babyish and elementary to you. Do them, nevertheless, and do them just as seriously as if they presented great difficulty. They will in any case become considerably more difficult as this article continues. You must remember that the chord is the basis of most present-day music—in fact, of most music written during this last hundred years. You must acquire facility in the execution of all chord passages, and you should be able to recognise them in simple form, almost as instantaneously as you recognise single notes. You should also try as far as possible to hear the sounds of them when you see them on paper.

Exercise 63.

Write, with correct key signatures, and play all major and minor common chords in simpler position as shown in Fig. 67.

*Fig. 67*

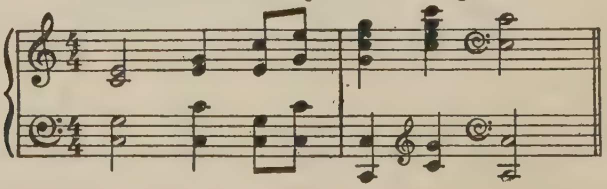


Exercise 64.

Invent many positions of the various common chords somewhat as shown in Fig. 68.

*Fig. 68*

The Chord of C major in various positions.



Study carefully the general appearance of the chords you have written, with a view to quicker recognition the next time you see them in a printed copy.

EXERCISE 65.

Practise playing on the piano various positions of all the common chords, without of course reference to any of your written work. This should form part of your daily practice routine.

### General Hints.

DO practise regularly, and endeavour to work in short periods frequently, rather than in long periods infrequently.

DO concentrate all the time. The moment you feel your powers of concentration becoming less, stop working at once.

DO NOT cheat. There are limitless opportunities in sight-reading exercises for so doing, but you cannot get the full benefit of your work unless the results which you show are honestly obtained.

DO be patient. Even if you cannot see what good the exercises will do you, carry on with them nevertheless. They are the result of much thought, and are based, not on one particular fad, but on all the processes, both mental and physical, which are involved in sight-reading.

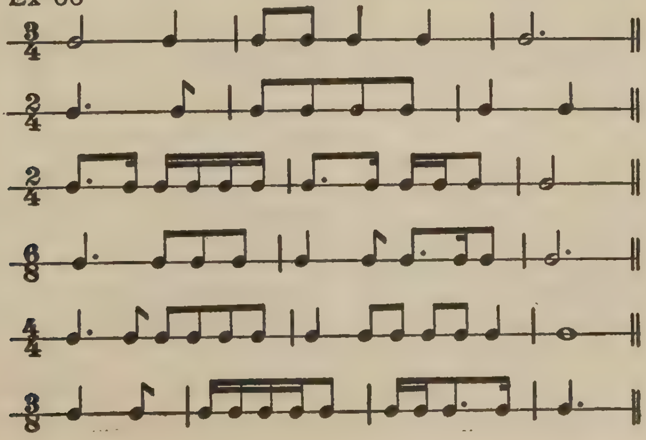
### Rhythmic Patterns.

The ability to reproduce instantaneously rhythmic patterns in music is of enormous importance in sight-reading, and it is the lack of ability in this direction which is at the root of a good deal of bad sight-reading. When you sit down to sight-read a new piece of music, you will have seen and played, countless times, all the *notes* of which that piece is composed. In all probability, however, you will not have met previously the *rhythmic patterns* of this particular com position. Your mind must therefore all the time be seeking out the rhythmic and the time basis of the music, because this will probably be new, whereas the notes will not. If you grasp the rhythmic pattern, you will probably be able to read the notes with comparative ease, but if your attention is focussed on the notes first and the rhythm second, the results will seldom be so good.

EXERCISE 66.

Below are some rhythmic patterns. Sight-memorise each one of them in turn, spending not more than five seconds on each, and then tap them out from memory. Invent more exercises on similar lines, but do not attempt the memorising on the same day on which you invent the exercises. A good plan is to write a few each day and memorise them on the following day. Continue over a period of time, gradually increasing the difficulty of the exercises.

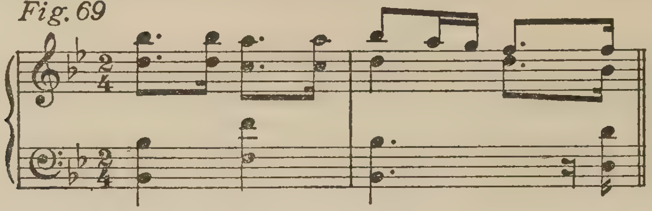
Ex 66



### Rhythmic Analysis.

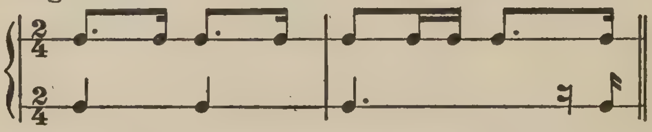
Now let us consider a concrete example. Suppose you have to sight-read the following bars.

*Fig. 69*



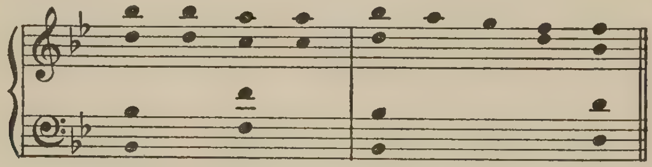
The image which should be conveyed to your mind ought to be somewhat as follows :—

*Fig. 70*



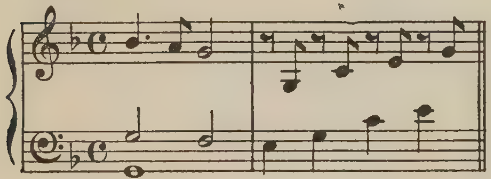
and *not* the following :—

*Fig. 71*

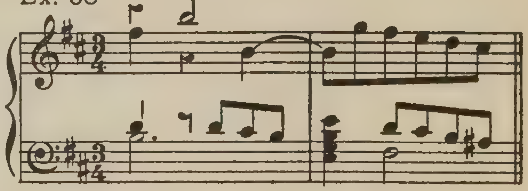


Have you ever thought of reading music like this? You must learn to analyse your music on a rhythmic basis. Below are some fragments of music. Analyse them rhythmically on the lines of Exercise 66.

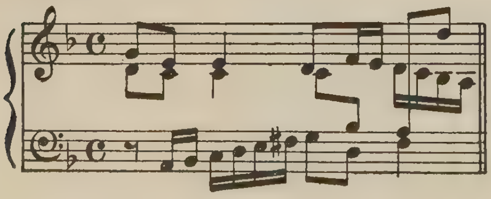
Ex. 67



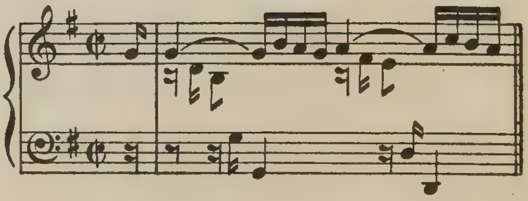
Ex. 68



Ex. 69



Ex. 70



Make this practice of rhythmic analysis a daily habit, choosing any new music which you may have by you for this purpose.

### "Sight-Memorising" Again.

EXERCISE 71.

Continue practising the "sight-memorising" process as outlined previously, endeavouring gradually to lessen the time spent on each example. For simple music, say of Primary Grade, a good sight-reader should be able to "sight-memorise" at the rate of about two seconds per bar. Aim at this standard. *Everything depends upon speed.* In difficult music you will not, of course, be able to read as much as a bar ahead, unless you are a phenomenally good sight-reader, but in difficult music your mental powers must work *just as quickly*. If you have any trouble in obtaining new music of any particular grade for this practice in "sight-memorising," you will probably find that your music-dealer will be willing to send you approval parcels of music of any desired grade, which are admirable for this purpose. This will serve a double purpose, as, in addition to obtaining plenty of material for practice purposes, you will become regularly acquainted with new music.

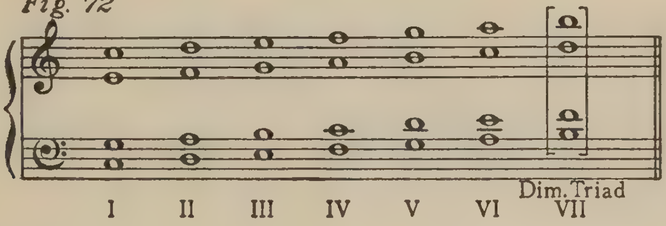
EXERCISE 72.

In any walks which you take, try to remember (in consecutive order if you possibly can) the registration numbers of any motor cars which you see. Do not work on the basis of constantly repeating each number to yourself for the purpose of memorising it, but try to get the numbers stored up in your mind just by glancing at them carefully *once*. This is a difficult but excellent test for developing your powers of "sight-memory." Do not be disappointed if you can remember only one or two numbers, but cultivate the habit of doing this, or something like it, during all your walks.

### Harmony.

An understanding of key, and the chords most generally connected with each particular key, is of considerable importance in sight-reading. The common chords in the key of C major are as follows :—

*Fig. 72*



EXERCISE 73.

Write and play them in this simple form and then write and play them in various positions somewhat as follows, using both chords and arpeggios.

*Fig. 73*

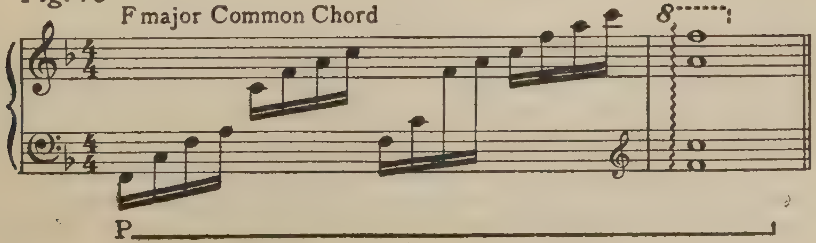
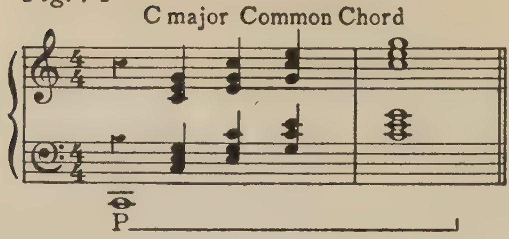


*Fig. 74*

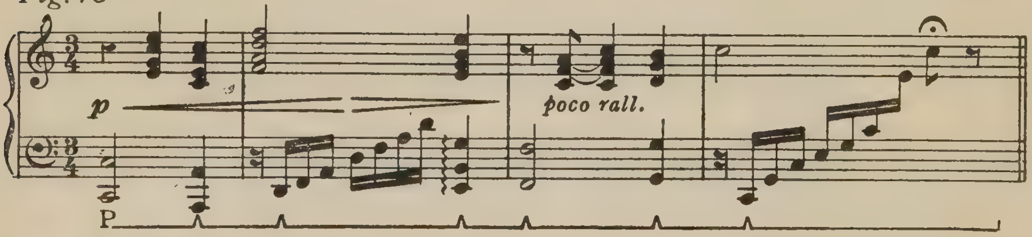


Do the same with the chords in G major and D major. Play a few chords in these keys every time you sit at the piano. Invent different positions for them at the piano, and try gradually to increase facility with which you play them. Try to remember the chords associated with these three keys. In a simple piece in C major, for example, one might expect to find, with varying degrees of frequency, the common chords of C major, D minor, E minor, F major, G major, and A minor (see Fig. 75). It is obvious, therefore, that you will sight-read a piece in C major more easily if you have played and seen these chords in various positions many times, because you will be on the look-out for them, you will recognise them more quickly, and your fingers will find the positions more easily on the keyboard. Study carefully, with a view to future recognitions, those chord passages which you have written.

## General Hints.

Before commencing to sight-read a piece, think about its key. You will probably say, "I always do this." What I mean, however, is: think about the common chords which are associated with this key. It is a good scheme to play, as a sort of introduction before commencing to read a new piece of music, a short passage containing some or all of the common chords in the particular key of the piece which you are about to play. Here is something which will serve as a pattern.

*Fig. 75*



Exercise 74.

Invent other examples if you can; if not, memorise the above and transpose the above example into the keys of G and D, and later into all keys.

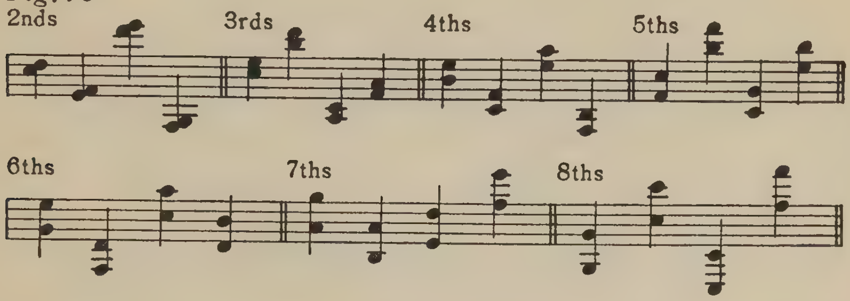
## Fingering.

Good fingering is of great importance. The leading fingers are marked in most good editions, and you should try to read them at the same time as the notes. In this way you will find that your general facility will be greatly improved. In chord passages the shape of the chords will immediately suggest suitable fingerings, but in scale and arpeggio passages greater care must be given to the actual finger markings. In right-hand ascending passages watch particularly for the thumb, and in descending passages for the third- and fourth-finger markings. In left-hand ascending passages watch carefully for the third and fourth fingers, and in descending passages for the thumb markings. The reason for this is that these particular fingers often indicate a change of hand position.

### Intervals.

The recognition of intervals is important. You must be able to recognise them instantly both in their vertical form and when they occur as successive notes in a melody. Below are some examples of all the intervals up to the octave. Study them carefully.

*Fig. 76*

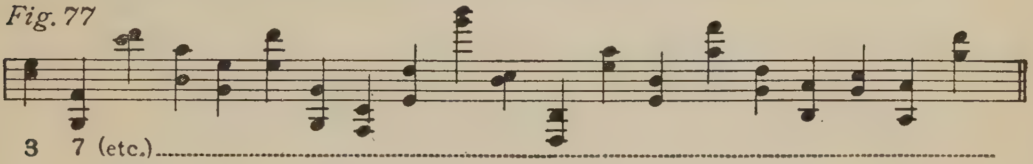


Exercise 75.

Fig. 77 consists of a succession of various intervals. Write underneath, the name of each interval as quickly as you can, and time exactly how long the process takes.

(The time taken by a good sight-reader is about 25 seconds.)

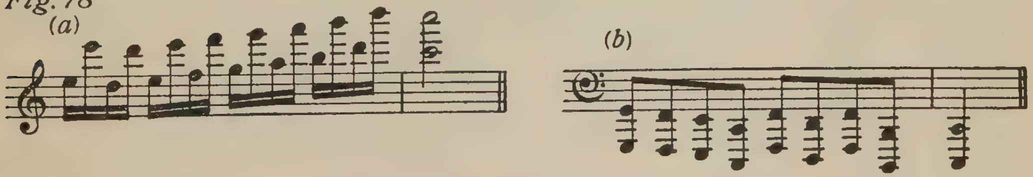
*Fig. 77*



### The Octave.

The recognition of the octave is particularly important, as so many pianoforte passages are based on octaves. One point to notice in connection with the recognition of the octave, apart from its general spacing, is the fact that one of the two notes forming it is always on a line and the other always in a space. Ledger line passages often simplify themselves considerably in this way. Consider the following examples.

*Fig. 78*



The first glance should show you that they consist of octave passages. This being so, the bottom notes only of (*a*) and the top notes of (*b*) should be read. It will easily be seen that what appeared, on account of the number of ledger lines, to be a difficult passage to sight-read, becomes quite easy if this plan is adopted.

### The Recognition of Intervals.

Here are a few hints for the recognition of intervals other than octaves—probably most of them will be known to you. The first thing to do, of course, is to acquire the power of quick judgment by means of the general size of the interval, *i.e.*, the distance between the two notes of which it is composed. No one, for example, would mistake a third for a seventh—the difference in the size of the two would make this impossible. One might, however, conceivably mistake a fourth for a fifth. Here is a simple plan to help you to recognise intervals which are rather near to one another.

Seconds, fourths, sixths, and octaves. One note is always on a line and the other in a space.

Thirds, fifths, and sevenths. Both notes are on a line or both in a space.

### Rhythmic Analysis Again.

Apart from the detailed rhythmic analysis which was described above, there is also a form of rhythmic analysis which is just as important—in fact, more important than this—and that is the process of simplifying the rhythmic pattern; in other words, the process of obtaining from a complex passage the simple rhythmic effect which it produces. Consider the following example :—

*Fig. 79*

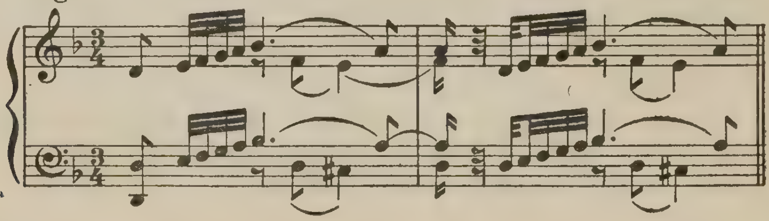
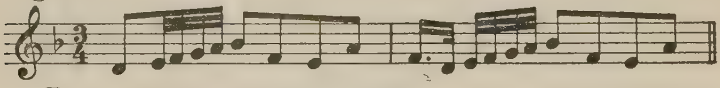


*Fig. 80*

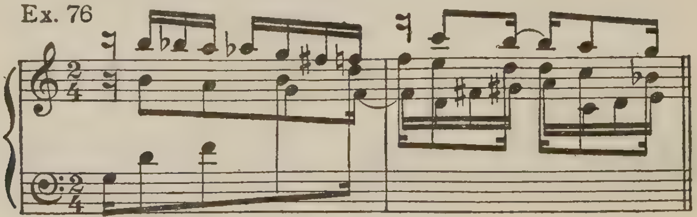


Fundamental rhythmic basis of fig. 79

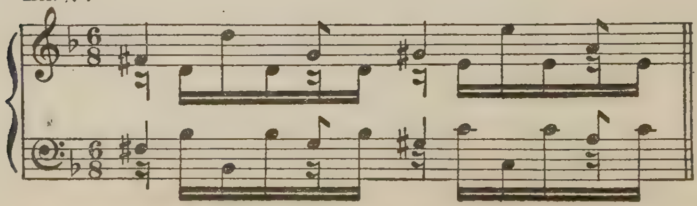
EXERCISES 76–79.

These are to give you practice in rhythmic analysis of this sort. Reduce each exercise (in the same way as in Figs. 79 and 80 above) into terms of their most simple rhythmic scheme. When you have written your results, tap out the rhythmic scheme of all the exercises given, without of course any reference to your written work.

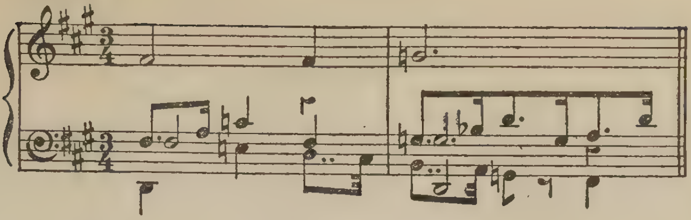
Ex. 76



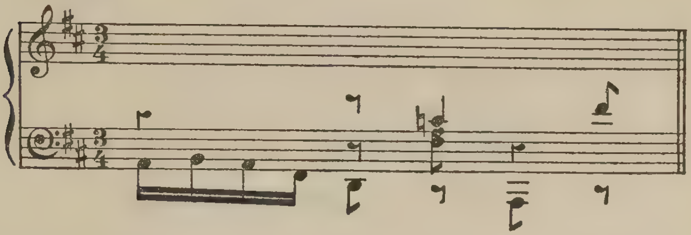
Ex. 77



Ex. 78



Ex. 79



### Further Exercises in "Sight-Memory."

EXERCISE 80.

Whenever you read a new book, glance down the page of chapter headings for a few seconds and try to remember as many of them as possible.

EXERCISE 81.

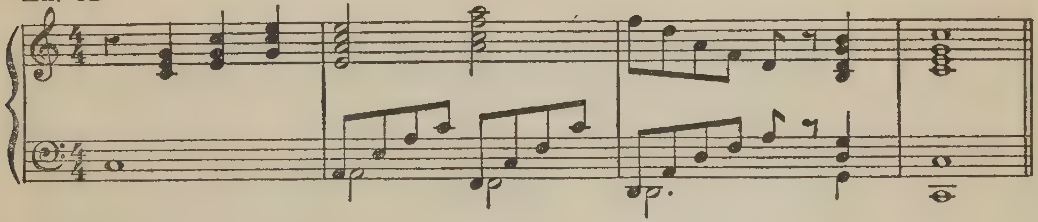
In your general reading try to cultivate the habit, at the end of every paragraph, of remembering one complete sentence in that paragraph and saying it aloud.

### Harmony.

EXERCISE 82.

The passage shown in this exercise is based on the common chords of C major. Invent similar passages in the keys of F, B flat, and E flat.

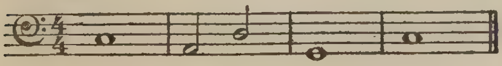
Ex. 82



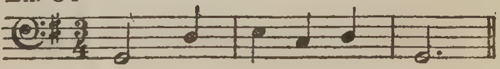
EXERCISES 83–85.

These consist of bass passages in the keys of C, G, and D respectively. Write common chords and passages based upon common chords above them.

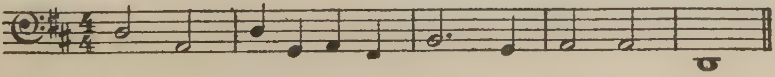
Ex. 83



Ex. 84



Ex. 85



Take Exercises 83, 84, 85 to the piano and extemporise chords and chordal passages upon them.

### General Hints.

Study very carefully the tempo of any composition you have to sight-read. Most people who start to sight-read a piece do so without any reference to the speed marking, with the result that they very often make difficulties for themselves by playing it too fast. It is important to be able to estimate metronome markings with some degree of accuracy. The metronome speed 60 is an excellent standard, because each tick of the instrument at this speed represents a second.

EXERCISE 86.

Estimate the speed of tempo 60 and then test your degree of accuracy by means of the metronome. After a few attempts you will be able to gauge it accurately. When you have this as a basis, try to acquire the power of estimating the speeds of 80, 100, 120, and 140 as a basis from which to work when trying to estimate other speeds.

### The Complete Mental and Physical Process.

The process of "sight-memory" which I have outlined is really only half the business, as a little thought will show you. Let us analyse what mental and physical processes take place during the sight-reading of a fragment of music of, say, four bars in length. The first process obviously is to "sight-memorise" the first bar (I have taken the unit of a bar for the sake of convenience—actually of course the amount that you read ahead will be determined by your individual ability and the difficulty of the piece). Having done this, you proceed to sight-memorise the second bar, and, *simultaneously with this process*, play the first bar which you have just "sight-memorised." This is a double process, and naturally more complex than the single one of "sight-memorising" by itself. This process of "sight-memorising" one bar, and ***simultaneously playing*** the previous bar, goes on during the whole of sight-reading.

The best exercise on the piano can be carried out only through the help of a musical friend who will stand beside you, and with a piece of paper or cardboard, help you as follows :—

### How to Proceed.

EXERCISE 87.

When you have sight-memorised the first bar, your helper will cover up that bar with the piece of paper. In this way, you are bound to play that bar from memory, and whilst playing it you should "sight-memorise" the second bar. As soon as your hands have finished playing the first bar, your helper will move the paper forward and cover up the second bar, and you will then proceed to play *that* bar from memory and simultaneously "sight-memorise" the third bar. If you can obtain help of this kind I should strongly advise you to do so, because it is the only way of eliminating the slightest possibility of cheating. I am not suggesting for a moment that you would consciously cheat, but it is the hardest thing in the world, until you have really acquired the habit of reading ahead, to be certain that you are so doing. Probably you will find at first that to read ahead a whole bar in this way is almost impossible, even at a snail's pace. Hence the value of a helper who understands music, because he will be able to keep the paper just as much or as little ahead of your hands as will suit your immediate requirements. The best plan, if you cannot obtain a helper (and again I advise you to make every effort to do so, if you possibly can, if only for a few moments every day), is to proceed by yourself in the following manner: Obtain the very simplest music. "Sight-memorise" the first bar of the first line and play it from memory whilst simultaneously "sight-memorising," not the second bar, but the first bar of the *second line*. Then play that bar from memory and simultaneously "sight-memorise" the first bar of the third line, and so on. In this way your eyes will not so readily be able to glance backwards at the bars which you are supposed to have memorised. Of course the results, musically, will be disconnected, but this does not matter very much; it is merely practice in the method which is required. Another plan is to take a piece of paper yourself and go straight through a piece, each hand separately, the hand not actually engaged in playing being used to cover up the bar which you have memorised, in the same way as a helper would. Daily practice in this method is absolutely essential, even if the very simplest music has to be adhered to for some weeks. Do not be surprised if you find it very difficult at first. It is a mental power which you are bound to possess in some degree or another, and any difficulties which you may find are not the result of lack of ability, but purely the result of lack of training. It is an established fact that hardly anyone works his mind to more than about a fifth of its possible capacity! It is important also that you should train your mind to work in this way in matters outside music, because, although the matter is different, the mental processes are the same.

### Training Away from the Keyboard.

Here is an invaluable exercise which should form part of your daily routine of practice.

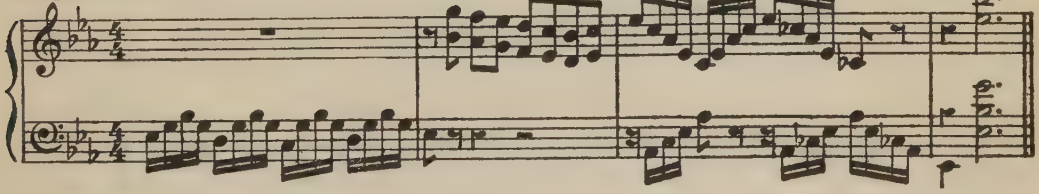
EXERCISE 88.

Take any book and open it at any left-hand page. We will assume that this is page ten. "Sight-memorise" the first three words, and then turn over to page twelve and recite aloud the three words of page ten that you have "sight-memorised," and simultaneously memorise the first three words on page twelve, and so on. Do not allow yourself more time in the "sight-memorising" process than it takes you to recite the three words which you have previously memorised. If you find this difficult, do the same exercise, memorising only two words. Make it your ambition to be able to carry out this process with a whole line, though this is probably an ambition that will take you some weeks to realise.

### General Analysis.

Experienced sight-readers can frequently find little clues in the construction of musical passages which will help them to sight-read quickly and accurately. Consider the following example:—

*Fig. 81*

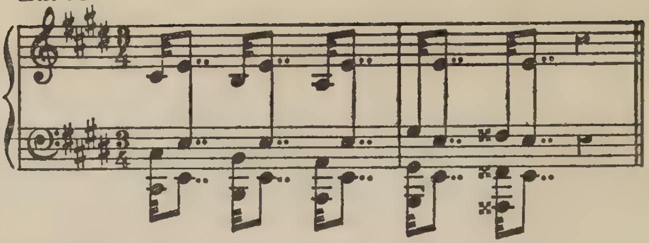


You should notice the following points: (1) that in Bar 1 the last three notes of each semiquaver group are the same; (2) that Bar 2 is made up of a diatonic scale passage in sixths; (3) that in Bar 3 the first minim beat is made up of the arpeggio of A flat major and the second minim beat of A flat minor; (4) that the last chord is E flat (the tonic). If you analyse the passage in this way it is perfectly simple to sight-read.

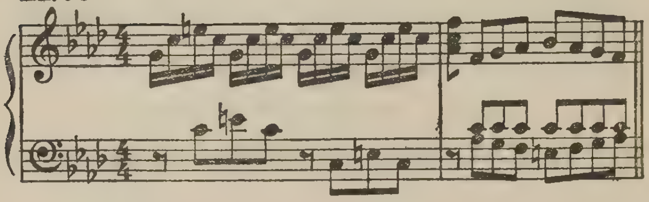
### Exercises in General Analysis.

Exercises 89–92 all contain some points in their construction which, if grasped, will enable them to be sight-read with greater ease. Read them, study them without playing them, and write down what you discover about each example.

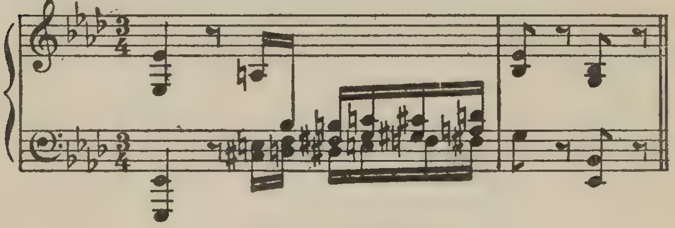
Ex. 89



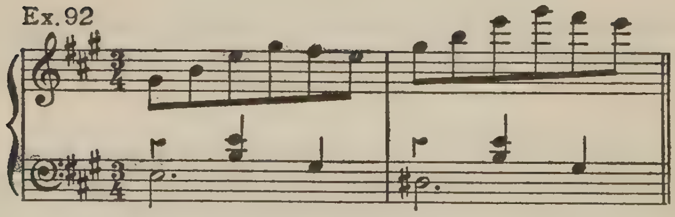
Ex. 90



Ex. 91



Ex. 92



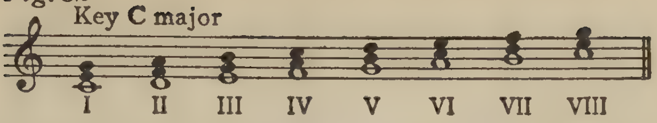
### Further Considerations as to Tempo.

If the piece you have to sight-read is so obviously beyond the standard you are able to manage, either from the point of view of technique or sight-reading, some compromise has to be made, as it is clearly inadvisable to play a piece up to the right speed with more wrong notes than right. If, therefore, you think the tempo as marked will be too fast for you, glance rapidly through the piece and find the passage with the shortest-valued notes. Quickly estimate the maximum speed at which you could play these, and adapt your tempo accordingly.

### Harmony.

Common chords or triads can be built up on all the notes of any major or minor scale. It is convenient to be able to refer to any of these chords by numbers. The simplest and most obvious method is to number them I, II, III, etc., according to the note in the scale upon which they are built, as follows:—

*Fig. 82*

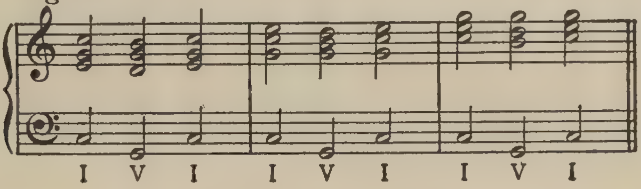


The most frequently used chords in any key are the I, IV, and V chords. It will assist you materially if you can gain facility in using these chords at the keyboard until you can use them extemporaneously just as easily as you can use the words of our spoken language. The plan on which to start is to become thoroughly accustomed to the progressions (in various positions) I, V, I, and I, IV, I.

EXERCISE 93.

Start by playing and memorising them in their simplest form. Below are some simple arrangements of the I, V, I progression in C major. When you have memorised them, transpose them (from memory if possible) into all the other major keys.

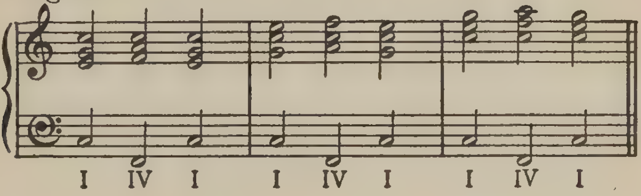
*Fig. 83*



EXERCISE 94.

Learn the I, IV, I progression as follows :—

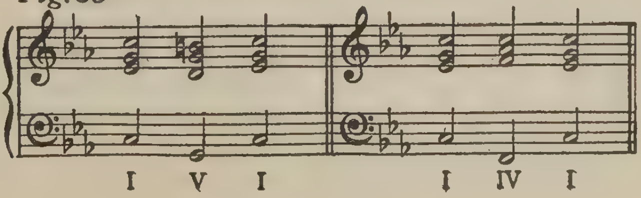
*Fig. 84*



EXERCISE 95.

Having memorised these, transpose them from memory into the other major keys. Then learn the same progressions in all minor keys as follows :—

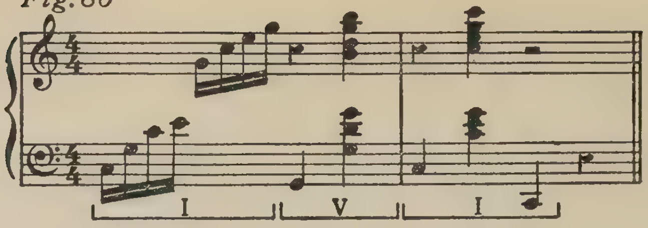
*Fig. 85*



EXERCISE 96.

Now play the same progressions in a slightly more pianistic form, somewhat as follows :—

Fig. 86



### How to Carry On.

"Practice makes perfect." An old saying and a good one. I will give you a better. "Good practice makes perfect," or better even than this, "Consistent and persistent practice, always with your mind on the job, eventually makes perfect." If you have worked all the exercises in this chapter, you should by this time have had a certain amount of practice in all the necessary mental processes involved in sight-reading, but a few weeks' practice, even on the right lines, will not make you a perfect sight-reader. The power to sight-read is so invaluable to a musician that two years spent in learning to be really proficient would repay you over and over again for the rest of your life.

Devote a certain amount of time daily to practising on the lines already laid down in this Chapter, and also to reading straight through as much new music as you can.

All the exercises which you have had are worthy of some months of practice, and you can easily increase the difficulty of each of them as you find yourself getting more and more proficient. So carry on and try to do a little every day.

## METHOD IN PRACTICE.

It is clearly desirable, particularly in these days, that every minute that we spend in practice should be definitely of value. It is also clear that the many and varied physiological movements and conditions which we have discussed are dependent not only upon an efficient body, but upon its co-relation and co-ordination with an efficiently working mind.

Any particular series of muscular actions affecting either movements or conditions of the human body tends to become automatic if repeated sufficiently often. It is possible, however, for any one particular person to form automatic habits either quickly or slowly, and with varying degrees of efficiency as far as *certainty* of the ultimate results is concerned. The degree of success will depend very largely upon the manner in which habits are formed—in other words, with the manner of practice. Now, the first point to realise about the formation of an automatic habit is this: we must, as far as it is humanly possible, during the practice or learning period, make every repetition of the actions absolutely similar in all respects. As far as the learning of a piece is concerned, this implies (1) never playing a wrong note, (2) never playing with wrong time, (3) never playing with wrong fingers, and (4), as far as possible, never playing with a wrong movement or physiological condition. As far as the first three points are concerned, correctness can be obtained by most people provided they possess sufficient patience to play slowly enough *from the very beginning*. There was, I think, an old rule which said "Slow practice is golden." It still holds good. Since, however, practice of this description does require a great deal of patience and a high degree of concentration, it would perhaps be advisable to explain why this accuracy, which can only be obtained by slow practice, is so essential to success.

The mind may be likened to a photographic film which is capable of receiving impressions, and, under favourable circumstances, of storing up these impressions as a permanent record. Let us take the photographic analogy a little further. Suppose we wish to take an interior photograph which will require an exposure of, say, a minute's duration. The normal way is to open the lens for the required period and then to close it again. There is, however, another method which would never be normally used, merely because it would be a lot of trouble and would produce no better results. That method would be not to leave the lens open uninterruptedly for the required period, but to give the film sixty separate exposures of one second each—the lens being closed for a more or less unlimited time between the exposures. For this method to be successful, however, it is clearly necessary that neither the camera nor any of the objects which it is required to photograph should be moved in the slightest degree. This method might be called a superimposition of impressions, sixty faint impressions being superimposed one on the other on the same film, and each impression absolutely coinciding with each of the preceding ones. If we were to move the camera or any of the objects, we should of course get a smudged film, and the average student, at the end of even a short time of practice at a new piece, has a very badly smudged mind, caused by many (and often different) mistakes during the course of that practice period.

Now a smudged film is not of very great consequence, as another can easily be put in its place. Unfortunately, in the case of a smudged mind, the cleaning-up process is not so easy, and it takes many correct repetitions to erase the trace of the earlier faulty one before really automatic accuracy is obtained.

In learning a new piece, as in many other things, first impressions count. It is not so dangerous to make a few inaccuracies during the later stage as it is during the earlier one. For this reason, therefore, the custom of playing a piece straight through for the purpose of getting a general impression of what it sounds like, is the most fatal of all errors in practising. More time is wasted and probably more pianistic despair is incurred through this than almost any other type of error. The first playing of any piece or section of a piece which has ultimately to be learned must (I repeat) be absolutely accurate. If the playing is sufficiently slow, this can be achieved, and practice with separate hands in the early stages is frequently desirable as a means of simplification and in order to obtain this essential accuracy.

Slow practice, however, will not necessarily give us right physiological movements and conditions. These should really be thought out *away from the instrument.* With the technical method that I am outlining in this article, such a process is not very complicated, since as far as movements are concerned, there are only two fundamental ones, and a brief glance at the passage will show which should be used, and the movements may be rehearsed in the correct rhythmic pattern away from the keyboard before any notes are actually played.

It is said of the late Eugen d'Albert—one of the pianistic giants of the last century, and possibly the greatest Beethoven player of all time—that he invariably adopted this practice of working out everything which he had to do with his fingers, hands, and arms *before he played a single note at the keyboard.*

I have already mentioned the two portions of the mind, and the fact that new processes can be learned only with the aid of the conscious mind. The subconscious, or memory portion of our minds, has an unlimited capacity for storing material and enabling us to remember it, provided that we approach the problem in the right way. Every piece that we learn is something entirely new—something about which we have no knowledge whatever; and, unlike the subconscious mind, the conscious mind, which is the actual instrument of learning, can deal with only a limited amount of new material at one time. It might be said to resemble an ordinary sponge, which, as everyone knows, has a limited capacity for absorbing liquid. Once a sponge has taken up as much as it is able, no more liquid can be absorbed, and if an attempt is made to do this, the result is either that fresh liquid is absorbed and the old is displaced, or that the fresh liquid is simply not absorbed. So it is with the conscious mind. Few people would attempt to learn by heart, say, a thousand lines of poetry by commencing at the beginning and reading through to the end and then repeating the process, and yet the majority of music students start their practice with the first bar and continue through to the end and then repeat the process, irrespective of the length or the difficulty of the piece! This is, of course, sheer folly. The mind works no differently, whether it is learning poetry or music. The subject-matter to be learned is different, but the mental processes are similar.

Now, it will be obvious that different minds have different capacities, and that whilst one student might be able to tackle a page of new material at a time, another student may only be able to deal efficiently with a few bars. Moreover, the difficulty of pieces varies considerably, and also within the limits of one piece the various sections are often very different in their degree of difficulty. Thus there can be no hard-and-fast rule as to how large a section of a piece one ought to learn at a time. It is a matter of experiment for every individual and every piece. A good working plan is to take quite a short section—say a four-bar phrase—and make from four to six consecutive repetitions of this section. If, at the end of this process, you do not find that you have a much greater fluency than you possessed at the beginning, it is a sure indication that the section was too long, and you should then begin again with a smaller section, and so on, until you have found one of the right length. If, on the other hand, after making, say, two repetitions, you find that you have acquired considerable facility, this is an indication that you might have taken a still longer section with good results.

The interesting point about this method of practice is that *it takes no longer than any other.* Suppose a piece is ten bars long, and suppose, for the sake of argument, that it takes ten seconds to play the piece through from start to finish. Ten repetitions of the whole piece will therefore take 100 seconds. Now, it will be clear that the time occupied for each bar will be one second. If, therefore, instead of playing the whole piece through ten times, we play the first bar ten times (a total time of ten seconds), the second bar ten times (total time ten seconds) and so on, the total time occupied by playing each bar ten times and then proceeding to the next is still 100 seconds. It is surely obvious which method will produce the better results. I am not suggesting that you should practise in sections of one bar at a time, although even this may be desirable at times, but I am suggesting very strongly that unless you follow some plan of this description, a great deal of your time will not only be wasted, but you may quite easily spend a certain time at the piano and find yourself worse off at the end of that time than at the beginning, because, not only will you be no better, but you may have stored up faulty impressions which will require additional practice time *for their correction and eradication before any progress can be made.* As a counsel of perfection, I would suggest the following method for learning a new piece.

(1) A short section should be selected for study and read through carefully without playing. The type of the passage should suggest the necessary movements and conditions, and these may be mentally rehearsed.

(2) The passage should then be played through, either separately or both hands together, at a speed sufficiently slow to ensure absolute accuracy in every detail.

(3) This process should then be repeated from four to six times, and judgment formed as to whether or not the section was a suitable length.

(4) If suitable progress has been made, a similar plan should be adopted with regard to the next section, and so on.

(5) At frequent intervals, a number of sections should be joined together and one or two repetitions made *without a break.* If you adopt this plan, you will find that you will progress beyond all your expectations.

In suggesting a plan of this sort, I realise quite well that many will find it is extremely difficult, for the very human reason that most of us are naturally anxious to obtain quick results. But are results of this sort worth while if the final goal which we set out to reach—which is, of course, facility, accuracy, and certainty in performance—should prove unattainable? If this conception is borne in mind, the keen student will, I think, find little difficulty in summoning up sufficient patience.

Of course, you will realise that by adopting a method of this sort, you will not see so much result for your work for the first two or three days, but since it is the ultimate end which matters, I am showing graphically in Fig. 87 some idea of what is likely to happen if any two individuals of the same proficiency and mental powers start to work at a new piece, and one practises well, the other badly. You will notice that the person who practises well does not make such noticeable progress in the earlier stages, but that at a certain point the progress reached by the two methods coincides, and that beyond this point the person who practises well considerably outstrips the person practising badly. Indeed, I have made the graph illustrating the person practising badly show a decline of progress after a certain time, and is it not a familiar and heartbreaking experience to

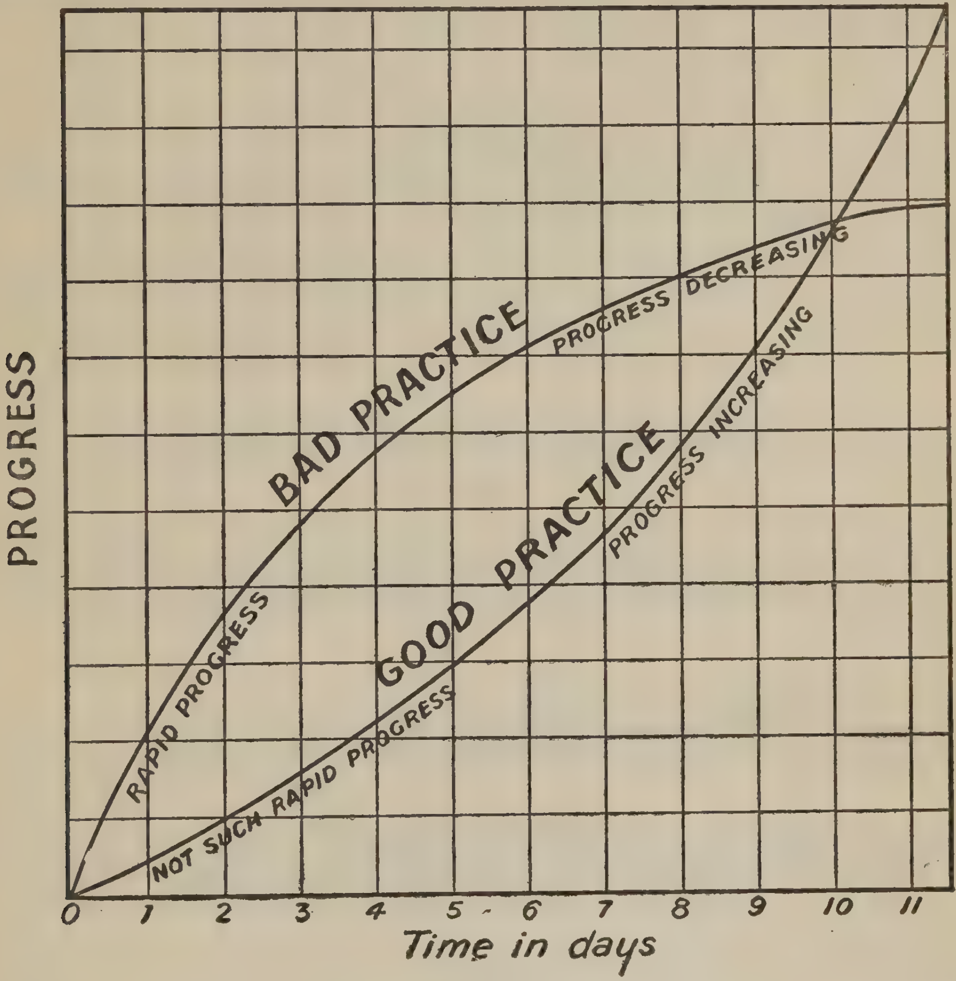


FIG. 87.

find that after a great deal of hard work and practice a piece is liable to get worse instead of better? This experience can easily be an experience of the past if real care is taken.

Now, it would, of course, be poor fun to spend the whole of one's practice period at work of this description. The majority of us expect to get some pleasure out of music and our practice, and rightly too. I would therefore suggest that, as far as possible, you should generally arrange your work so that during any practice period you have two or more pieces which need practice, each being at a different stage of advancement. Thus, if you are proposing to practice for one hour—the first twenty minutes might well be spent analytically on a new or nearly new piece The second twenty minutes might be devoted to a piece which is, say, about half learned, when large sections will be practised, and special attention given to particular difficulties. The third period of twenty minutes might be given to pieces which have been perfectly learned as to notes, and which need playing through from start to finish for the purpose of memorising and in order to obtain a proper perspective of the work as a whole. If some such plan as this is followed, progress will be rapid, and at the same time you will obtain the enjoyment which you ought to obtain from your music.

Two more points. There is such a thing as staleness, and a very real thing it is. Pieces require regular rest periods if this is to be avoided. The first signs of staleness are usually noticeable by the playing badly of a piece or portion of a piece which has hitherto been played perfectly well. If these signs persist, work should immediately cease, and a period of complete rest—possibly of weeks—should be taken. If the piece has been properly learned in the first instance, the technique will not be forgotten. Indeed, in many cases you will notice an improvement both in your artistic and interpretative powers after a reasonable rest.

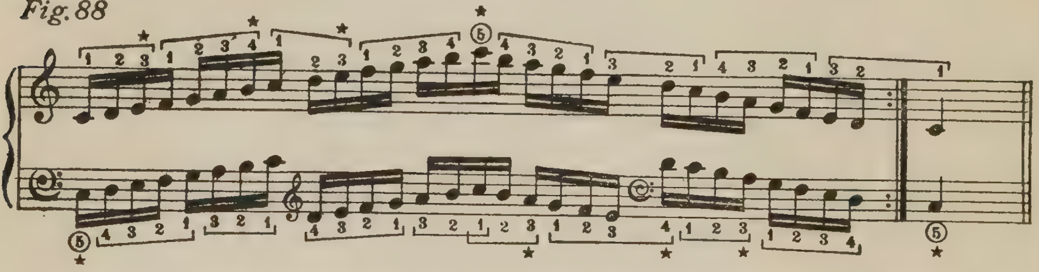
The second point is this. There is another form of practice which is not keyboard practice, and that is the mental reading through of a piece which you have learned well, hearing the sounds in your mind and trying to imagine how you would make it sound at the keyboard if you had an absolutely faultless technique. It is really only in this way that your artistic imagination can have its fullest possible scope. There are always limitations for the body. The imagination has fewer, if indeed any, limitations. You will find work of this kind needs much concentration to begin with, but you will ultimately find it a fascinating and a profitable type of study.

## THE FINGERING OF SCALES AND ARPEGGIOS.

### Scales.

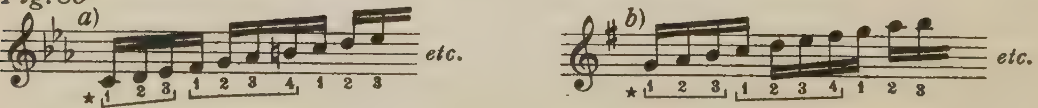
The fingering of all diatonic scales (single notes) is based upon two groups, *i.e.* $\underbrace{123}\ \underbrace{1234}$, and when played in two or more octaves the first finger (thumb) is passed alternately under the third and fourth fingers, the fifth finger being used for the extreme notes (highest or lowest, R.H. or L.H.). See Fig. 88.

*Fig. 88*



The majority of major scales with sharp signatures, and their tonic minors (harmonic form) are fingered alike in the R.H. Those commencing on a white note begin normally with first finger, in two groups, as above, *i.e.* C, G, D, A, E, B Major and Harmonic Minor.

*Fig. 89*



After the scale of E Major with four sharps, we get scales which involve all the black notes. It is a good rule to remember that the second and third fingers must always fall on C Sharp and D Sharp, and the second, third, and fourth must fall upon F Sharp, G Sharp and A Sharp in the major modes. From this rule the initial finger can easily be remembered. The rule also applies to the L.H. In the minor mode (harmonic), where the lowered third and sixth necessitates a white note instead of a black, the first finger is passed under in the R.H. In the L.H. the fingers will fall normally.

*Fig. 90.*

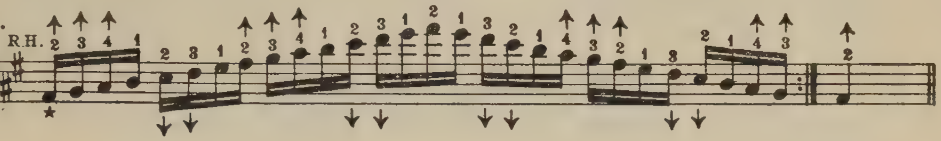
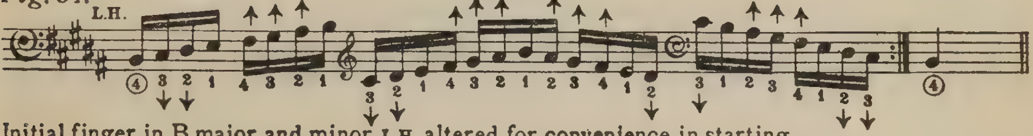
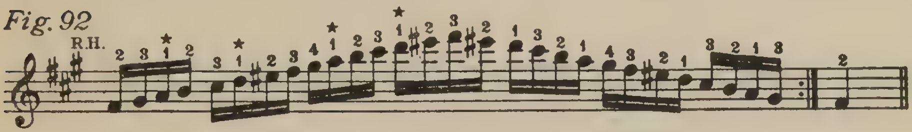


*Fig. 91.*



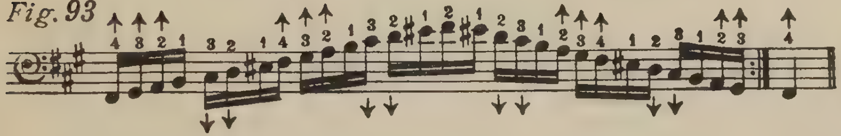
Initial finger in B major and minor L.H. altered for convenience in starting.
B major and minor R.H. fingered as C major.

*Fig. 92*



also C♯ mi.
and G♯ mi.

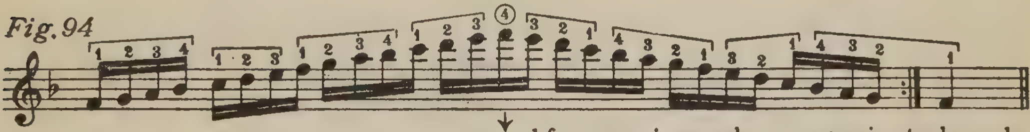
*Fig. 93*



Fingers normal.
White note takes
place of black.

*Flat Scales.*—F Major is the only one beginning upon a white note. This is fingered in normal groups, but in the R.H. the groups are reversed, *i.e.* 1234 123.

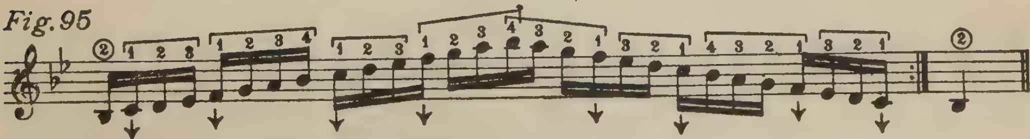
*Fig. 94*



used for convenience when commencing to descend

The remaining major flat scales (B Flat, E Flat, A Flat, D Flat) begin with the second finger in R.H. and conform to the fingering of C Major, *i.e.* first finger on C & F.

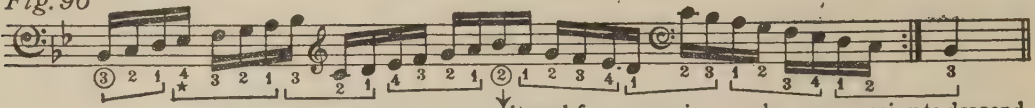
*Fig. 95*



D♭ major will also conform to rule given in Fig. 90.

In the L.H. these scales all commence with the third finger, and after the first finger has been used, the fourth is passed over, *i.e.* 321 4321.

Fig. 96



altered for convenience when commencing to descend

The Harmonic Minor scales are fingered similarly, with the exception of B Flat & E Flat Minor in the L.H. These are altered to avoid the awkwardness that would arise if the thumb fell on the black note.

Fig. 97

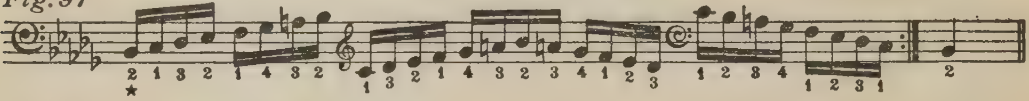
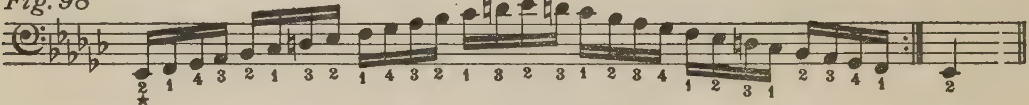
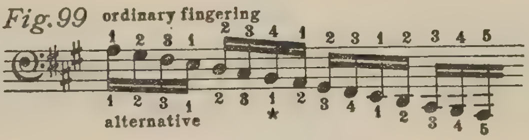


Fig. 98



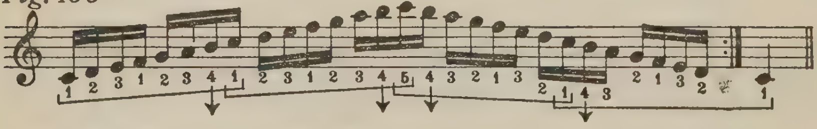
In the L.H. playing of scales descending, when a white note follows a black one, as in G Major, D Major, A Major, it is permissible to pass the first finger under, thus allowing the fourth finger to fall upon a black note. Really, this fingering works more naturally.

Fig. 99



Following the rules shown in Figs. 88–98, however, it is a good point to remember that the fourth finger is used only once in each octave (excepting in those scales where it occurs at extreme ends, as B Flat Major in R.H. and B Major in L.H., etc).

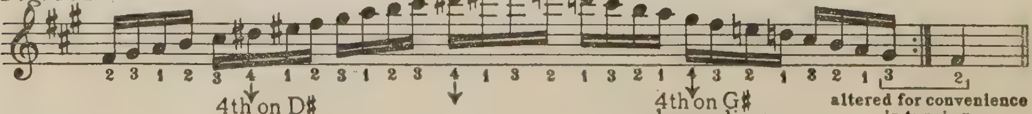
Fig. 100



See Fig. 91 L.H. for initial 4th finger.

*Melodic Minor Scales.*—The fingering of these is based upon similar rules to the Major and Harmonic Minor. As the descending form is different to the ascending, this of course, necessitates slight deviation of fingering, according to the position of the black and white notes that are used. In the scales F Sharp, C Sharp and G Sharp Melodic Minor there will be slight alterations in either the R.H. or the L.H.

Fig. 101



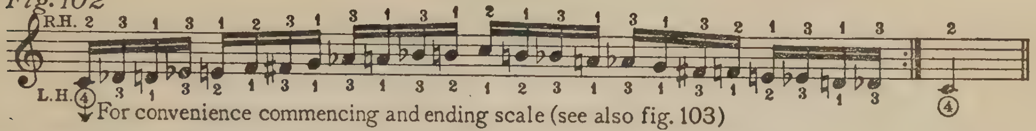
4th on D♯ ascending

4th on G♯ descending

altered for convenience in turning

*Chromatic Scales.*—There are three different sets of fingering for Chromatic scales. The one most frequently used is that in which the third finger falls on the black notes. This is used for brilliant playing.

*Fig. 102*


R.H.
L.H.
For convenience commencing and ending scale (see also fig. 103)

For rapidity and lightness, either of the following two sets may be used.

*Fig. 103*

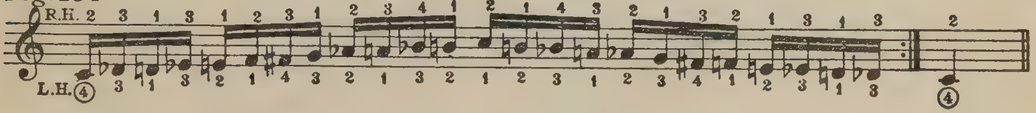
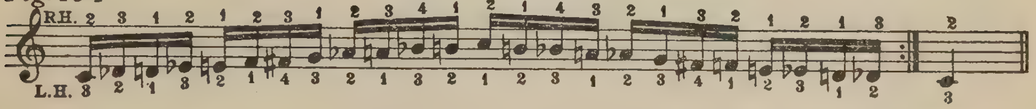


*Fig. 104*



*Arpeggios.*—The fingering of arpeggios, consisting of white notes only, is straightforward. In the Root Position, in R.H. the third finger is used, and in the second inversion in L.H. the third finger is used. In all other positions, both R. and L.H., it is the fourth finger that is used. It may be pointed out that, in common chords and their inversions, the third and fourth fingers are never *both* used. The choice as to which finger is regulated by the width of the interval. (This applies to arpeggios consisting of all white notes, or both black and white.) The white-note arpeggios are C, G and F Major and A, E and D Minor.

*Fig. 105*

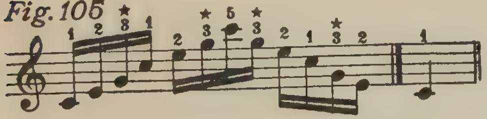


*Fig. 106*

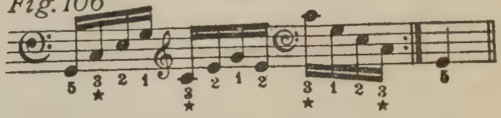
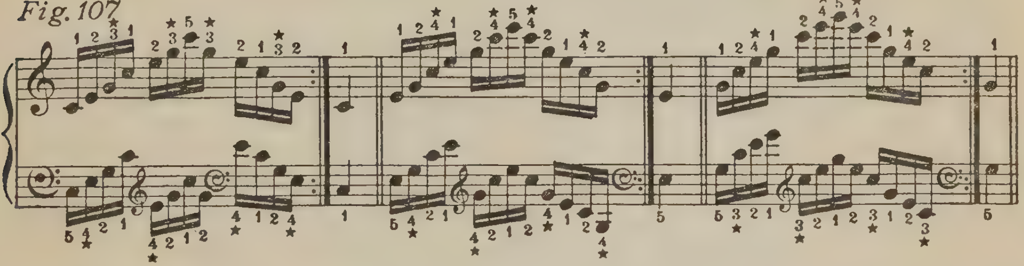
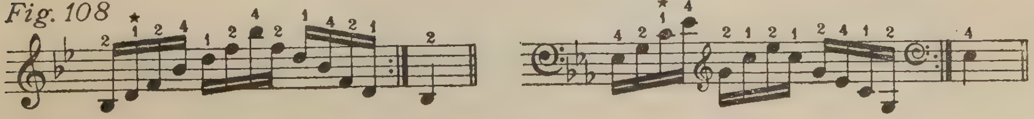


*Fig. 107*



In arpeggios which commence upon a black note, the rule to remember is that in the R.H. the first finger is used on the first white note (ascending), and in the L.H. the first finger is used on the last white note (ascending). In descending, of course, this is reversed

*Fig. 108*

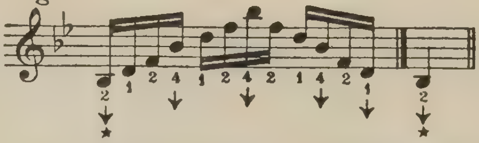


The following are the chords commencing upon a black note, and containing two or more white ones.

Root. B Flat Major. First inversion of D, A and E Major. C and G Minor.
Dominant sevenths of F Sharp and E Flat.
First inversion of the Dominant sevenths of G, D and A.
Second inversion „ „ „ of F Sharp.
Third inversion „ „ „ of F, B Flat and E Flat

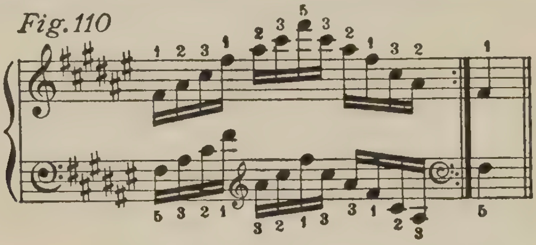
The initial note in the R.H. and the highest note in L.H. may be altered for convenience in starting and finishing the passage.

*Fig. 109*



The two arpeggios consisting of all black notes, *i.e.* F Sharp Major and E Flat Minor, begin with first finger in R.H. and the fifth finger in L.H. similar to arpeggios of all white notes.

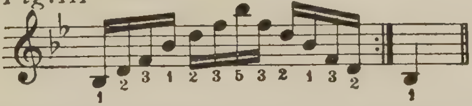
*Fig. 110*



The rule regarding the use of thumb on the first white note in R.H. and last in L.H. applies to all Dominant and Diminished sevenths.

In arpeggios commencing on black notes, an alternative fingering is *occasionally* used, *i.e.* commencing with thumb in R.H. and the fifth finger in L.H.

*Fig. 111*



Compare with Fig. 108

Arpeggios are best practised in two or four octaves, the notes feeling to be grouped in twos, ours, or sixes, thus avoiding a natural tendency to accent the thumb note.

Dominant and Diminished sevenths are best grouped in triplets, for a similar reason and played in three octaves.

*Fig. 112*

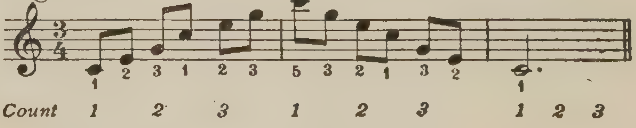
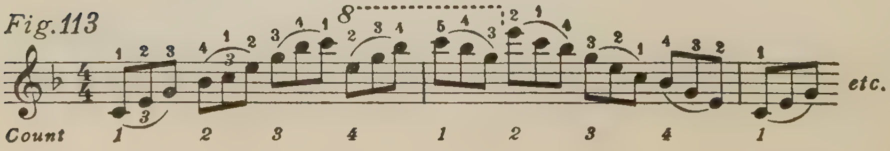


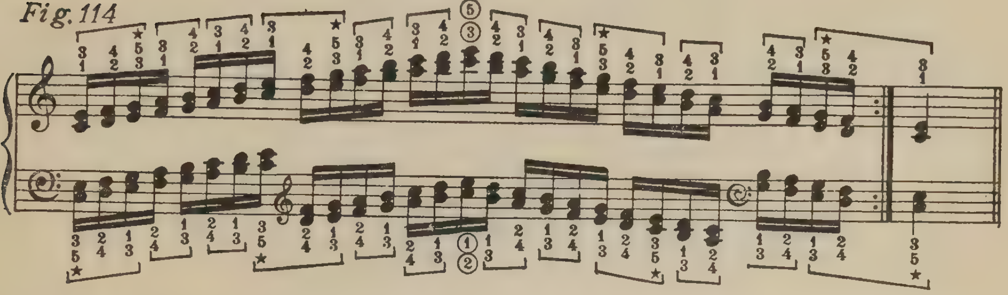
*Fig. 113*



*Diatonic scales in DOUBLE THIRDS.*—For fingering purposes these are divided into three groups :—

145 34 34
323 12 12 in the R.H.
321 21 21
543 43 43 in the L.H.

*Fig. 114*

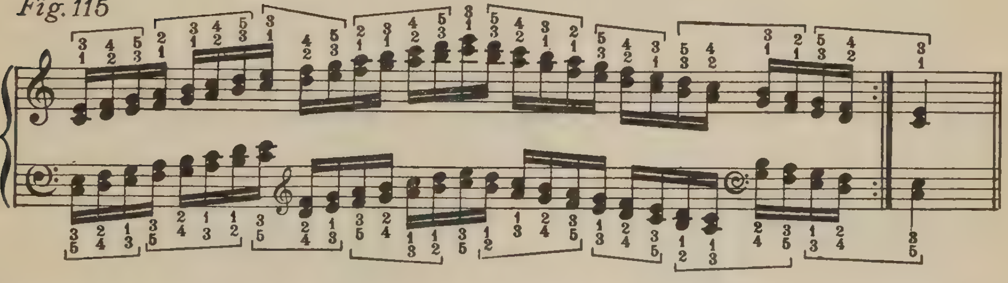


the fifth finger being used *once* in each octave. As in the single-note scales, the actual fingers with which to commence will vary according to formation of scale. These can, however, be easily gauged.

Another system of fingering Double Third scales, is the "Double Thumb Group." This fingering is divided into two sets :—

345 2345
123 1123 in the R.H.
321 3211
543 5432 in the L.H.

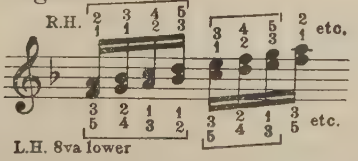
*Fig. 115*



These can be arranged into sets. All the scales commencing on white keys, except F and B, are fingered alike, as C Major, *i.e.*, C, D, E, G, and A Tonalities. (Major and Harmonic Minor.)

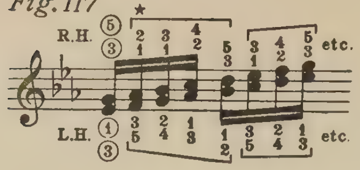
F Major starts with the "Double Thumb Group" first in both hands.

*Fig. 116*



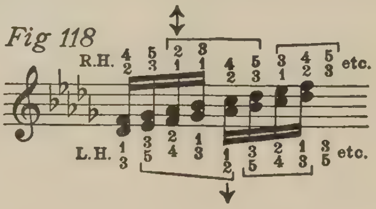
Into the next group can be arranged E Flat and B Flat in which the "Double Thumb Group" begins on the *second* note of the ascending scale.

Fig. 117



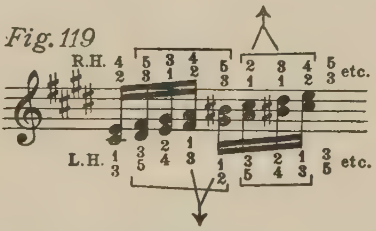
In the third group we have five scales, *i.e.*, B, F Sharp and D Flat Major, also B and B Flat Minor. The rule for these scales is that the index finger of " Double Thumb Group " falls upon the centre of the three black notes, or, in the Minor Modes, the white note taking its place.

Fig 118



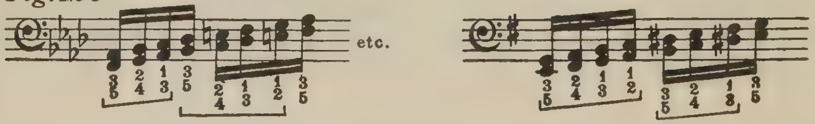
In the fourth group we have G Sharp, C Sharp, and F Sharp Minor, also A Flat Major. Here the " Double Thumb Group " belongs to the sixth and seventh notes of the scale.

Fig. 119



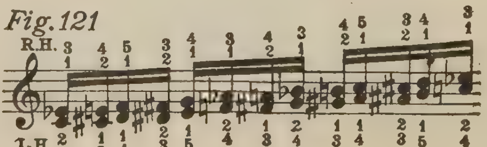
The remainder of the minor scales are fingered like their tonic majors, with two exceptions F Minor L.H. starts with the " Five-Finger Group " ; E Minor L.H. starts with " Double-Thumb Group."

Fig. 120



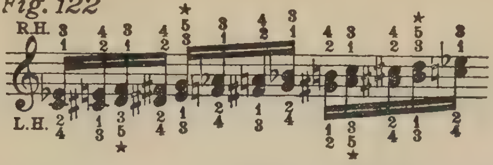
*Chromatic Double Thirds.*—One method of fingering these is for the second and third finger to be used on the black keys, both hands. It will be noticed that the *inside* part of the scale has the thumb on all white keys, and the *outside* part has the fourth finger, except where two white notes occur in succession, when the fourth and fifth are used.

Fig. 121



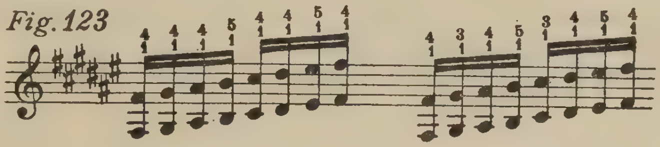
The other method of fingering these scales is to use the fifth finger twice, in each octave. The fifth finger will fall on G and D in the R.H. and on D and A in the L.H.

*Fig. 122*



*Double Octave Scales.*—If these are played *staccato,* they are usually fingered with fifth and first. If *legato* is required, the fourth finger can be used on the black notes, or (if hand is large enough) third and fourth alternately.

*Fig. 123*

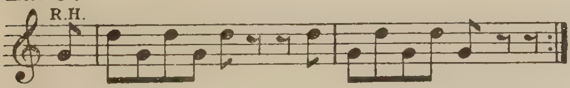


### SOME SUBSIDIARY TOUCHES AND TOUCH FORMS.

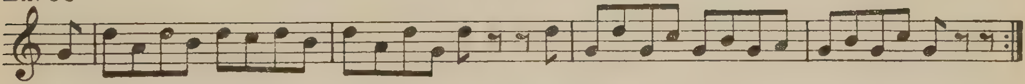
We have now to consider five additional and subsidiary touches or touch forms.

1(a). *Forearm Rotation Touch.* When a series of *legato* single notes alternates in pitch—that is to say, when a passage consists first of a lower note and then of a higher note alternately—rotary movements of the forearm are valuable in assisting the fingers. Below are some typical passages which need this touch form. Rotation of the forearm is a nicely balanced movement and one with which we are all familiar in actions outside pianoforte-playing. We use it for turning door-handles, winding up clocks, and so on. The rotary movements employed in pianoforte technique really take the place of finger movements. That is to say, the motive power for moving the keys downwards is supplied by the twisting and untwisting movements of the forearm and not by the finger movement from the knuckle joint. Here are a few exercises.

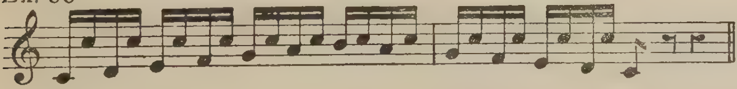
Ex. 97



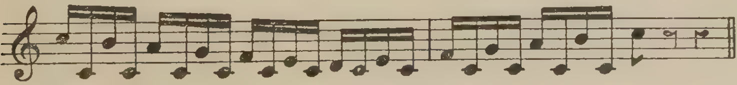
Ex. 98



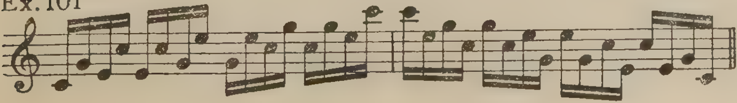
Ex. 99



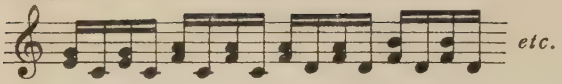
Ex. 100



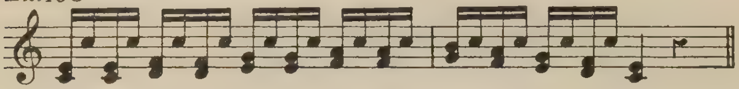
Ex. 101



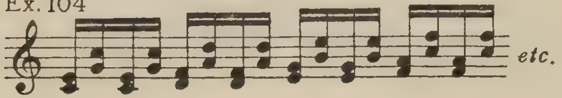
Ex. 102



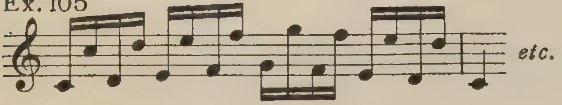
Ex. 103



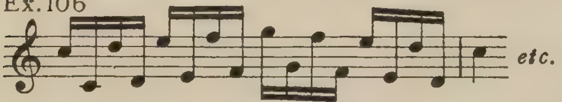
Ex. 104



Ex. 105



Ex. 106



Also similar exercises for the left hand, with both hands together and in different keys.

The following points should be noticed in connection with rotation touch.

1. The fingers should be firm. The knuckle and finger joints must not be allowed to collapse.

2. Do not rotate inwards (*i.e.* towards the thumb side of the hand) further than the flat position of the hand, as this will bring the elbow up and make the movement awkward.

3. Do not make the movements larger than is strictly necessary. Only the slightest movements are usually desirable.

4. Avoid rotary movements in all except alternating passages. They should not be used in scales, arpeggios, and similar passages.

5. As far as possible, allow the weight of the forearm to rest through each finger in turn when performing this touch, as in normal *legato* finger touch.

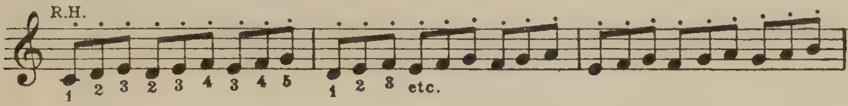
6. Avoid rotation in trills except when one of the notes has to be played with the thumb. In this case rotary movements are advantageous, provided always that they are not too big.

1(b). *Upper Arm Rotation Touch.* In some cases it is advisable to let the whole of the arm rotate from the shoulder socket. This movement is particularly advantageous when the span of the passage is wide, *i.e.*, in the case of broken octaves and similar passages, or when the passage is very prolonged. A somewhat different position will be necessary in order to carry out these movements. The body should lean slightly backwards from the waist, and the elbow and wrist should be a little higher than their normal position.

2. *Finger Staccato.* Finger staccato is used only for the most rapid and the lightest passages: Used for slower passages, finger staccato tends to give a serious loss of control of tone. Correct control can be obtained only if the fingers follow one another in sufficiently quick succession. For staccato in all other passages, whether of single or double notes, I use, as I have already mentioned, an oblique *arm* movement similar to that used for chords, intervals, etc. The position of the fingers is important in finger staccato. They should be maintained in as flat a position as

possible, the movements originating from the knuckle joints. The condition of the arm, also, is important. This touch form is one of the few which demands an entirely self-supported arm. Help is obtained by keeping the elbow fairly well up. Exercise 107 should be practised regularly until some degree of tone control and the correct movements and conditions are obtained.

Ex. 107

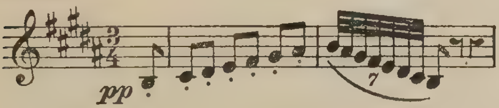


and similarly for the left hand

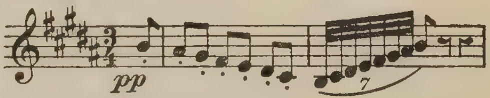
*molto staccato*, ***pp*** *e leggiero*

In the early stages of practising this exercise, it will probably be found that it is extremely difficult to control the tone, and if soft playing is attempted (as it should be), a good many notes will probably not sound at all. One should persevere with this exercise nevertheless, remembering that the important thing is not so much tone control as the correct feeling of the finger swinging freely at the knuckle joint and sufficiently gently to produce really soft tone. When a reasonable degree of proficiency has been obtained, Exercises 108–110 should be practised.

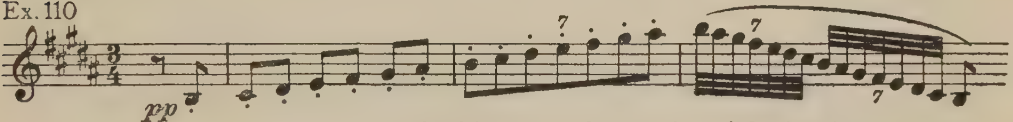
Ex. 108



Ex. 109



Ex. 110



and with quavers downwards and demisemiquavers upwards

It is important that the scale of B major given in these exercises should be practised for some considerable period before other scales are attempted. The reason for this is that the prevalence of black notes enables all the fingers to be maintained quite naturally in a flat position. Really high speed should be obtained ultimately with this exercise, and later with all other scales, major and minor, played in a similar manner. Tone control here is certainly of vital importance in the demi-semiquaver portion of the scale. At the higher speeds naturally each note will not sound separate and detached. Nevertheless, the notes are slightly detached, even though the audible effect is actually not that of staccato as such, but merely of extreme lightness and delicacy. This is the so-called "pearly" touch, of which Pachmann was such a notable exponent. Thus it will be seen that this touch form is used not merely for passages marked staccato, but for all very rapid finger passages in which the utmost lightness and delicacy are required. It is therefore extremely useful in many passages where its use might not be suspected—for example, in most of the delicate and soft cadenza passages of Chopin, Liszt, etc., etc., *whether these are marked staccato or not.*

3. *The Use of the Arm in Melody Passages.* In cantabile melody passages and passages in which certain notes require accentuation, the use of the motive power of the arm is valuable, as this saves any forcing action on the part of the fingers. The arm may be either pushed forward or dropped. These methods of arm use have been fully described earlier, and no additional explanation is required. The following examples should be carefully studied.

Fig. 124

**BRAHMS**: *Rhapsody in G minor, Op. 79, No. 2.*

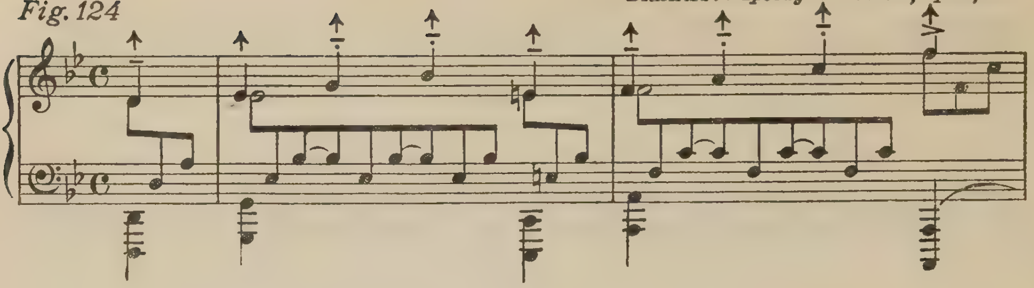


Fig. 125

**SCHUBERT**: *Impromptu in G, Op. 90, No. 3*

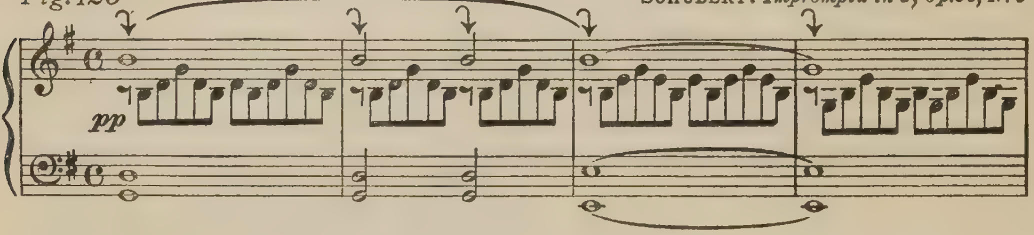


Fig. 126

**CHOPIN**: *Waltz, Op. 42.*

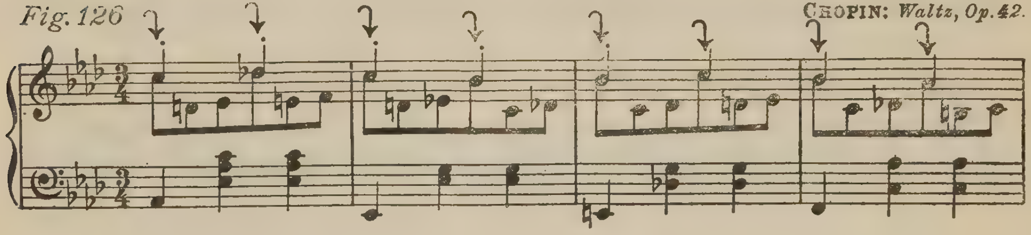


Fig. 127

**CHOPIN**: *Nocturne, Op. 32, No. 1.*

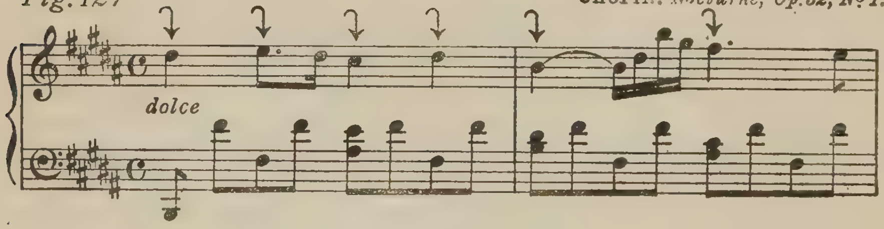


Fig. 128

**CHOPIN**: *Study, Op. 10, No. 4.*

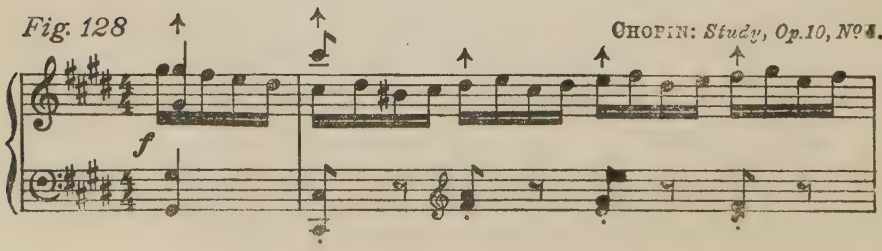
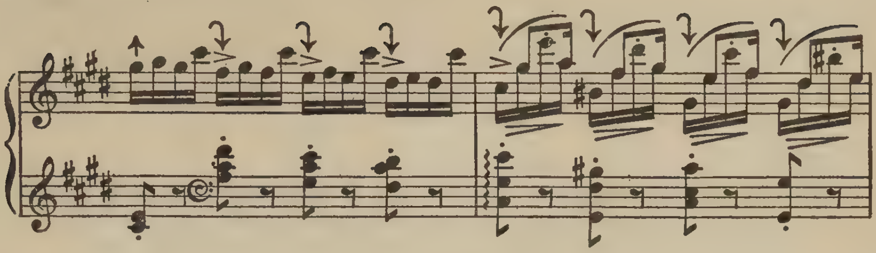


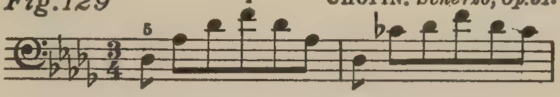
Fig. 128—*continued.*



An arrow pointing upwards indicates a push of the arm, and a curved arrow indicates a drop of the arm. Only experiment will teach which particular form of arm use is the most desirable for any particular passage, and even experienced performers find that such experiment is frequently necessary.

4. *The Lateral Adjustments in Finger Touch.* Strictly speaking, this is not a separate touch form, but consists of a series of sideway adjustments which the arm has to make in certain types of finger-work passages. Examine the following :—

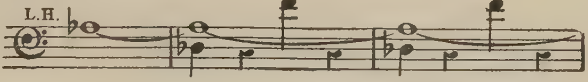
Fig. 129 **Chopin:** *Scherzo, Op. 31.*



It is obvious that having played the first note with the little finger with the normal arm position, it will be impossible to play the highest note of the group (F) with the thumb unless the arm is moved inwards towards the body and also slightly forwards. Similarly, having played this F, the arm is not now in a position to enable the little finger to play the lowest note of the group (D flat). Thus, in order to play a passage of this description, the arm has to make lateral or sideway movements in order that all the fingers in turn may reach a comfortable position for playing their respective notes. Thus each finger—if the passage is *legato*—acts as a pivot for the lateral swing of the arm.

Practise the following exercise and invent other similar ones.

Ex. 111

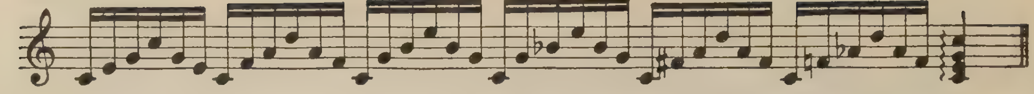


The middle finger in this exercise should rest on the keybed of the note A flat throughout the whole of the exercise and should (as previously described) thus support the weight of the forearm. Gradually increase the speed of the exercise.

Now, the arm in swinging from side to side acquires a certain momentum, and this should be used to help the fingers to supply the force necessary for key depression. In other words, you should allow the swing of the arm to help you in depressing the keys, and not rely merely upon isolated finger movements from the knuckle joints. This principle is applicable in all extended passages such as the one shown in Fig. 129.

When practising passages of this description you should, when they are being played slowly, depress the keys largely by means of finger movements, but as the speed of the passages increases, you will find that the swing of the arm to and fro will assist the fingers, and thus they will not have to work so vigorously. At high speeds, therefore, the arm and fingers are both playing their part in key depression. The following exercise will be found helpful.

Ex. 112



and similarly for the left hand and in different keys.

Passages of this description will never sound really correct unless this knack of finger-plus-arm work is mastered. The necessary flow and lilt of the passage seem lacking if the arm does not contribute its proper share; and if finger work is neglected, and the arm is made to do too much, the passage is liable to sound smudgy and lacking in control and general neatness.

Thus, when practising slowly, you should concentrate mentally upon the work of the fingers, and so form correct automatic habits in this respect; and at high speeds you should think mainly about the movements of the arm. If you have practised correctly in the earlier stages, the fingers will then look after themselves.

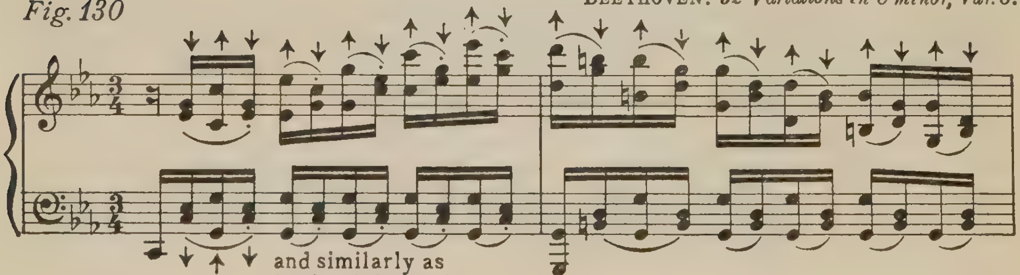
This kind of passage work is so frequently met with in pianoforte music that every effort should be made to master the necessary technique.

5. *The Backward Pull of the Arm for Key Depression.* I have spoken at some length at an earlier stage of the forward push of the arm for the playing of chords, intervals, and detached single notes. The reverse pull of the arm which normally follows each forward push may on occasions also be used for actual key depressions and tone production. I have already explained in connection with octave technique how this backward movement of the arm may be used to eliminate fatigue, and it is used frequently in passages other than octave passages.

The following examples will show some of the possibilities of this form of arm use:—

*Fig. 130*

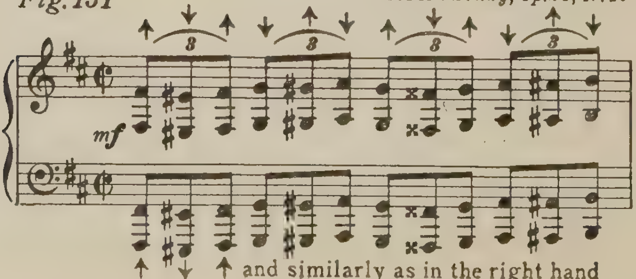
BEETHOVEN: *32 Variations in C minor, Var. 8.*



and similarly as in the right hand

*Fig. 131*

CHOPIN: *Study, Op. 25, No. 10.*



and similarly as in the right hand

An arrow pointing upwards indicates a push of the arm, and one pointing downwards indicates a pull of the arm. Remember that in this touch, as in other arm touches, the wrist, knuckle, and finger joints must be kept firm.

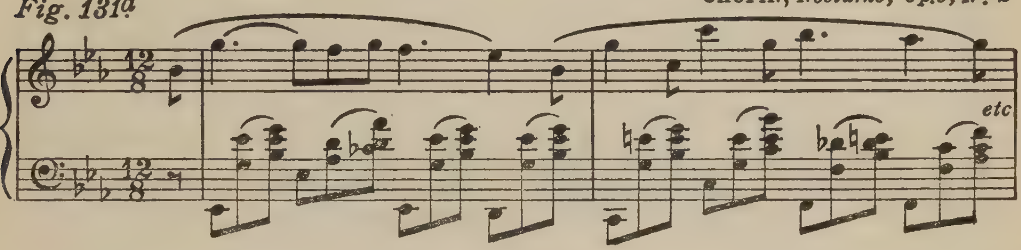
In this touch form the wrist should *not drop* except when it is used in connection with octave technique already described. This touch form is also used in quick passages when playing an interval or chord on white keys following one on a black key.

## PART-PLAYING.

The term part-playing in its simplest meaning implies the bringing out, or making prominent, of one or more melodies against a background of harmonies or other less important melodies. It is a term usually applied to fugal work, but in its widest sense it is applicable to a very large proportion of music, at any rate to all music which has any definite melody as a basis. Consider the following example:—

*Fig. 131a*

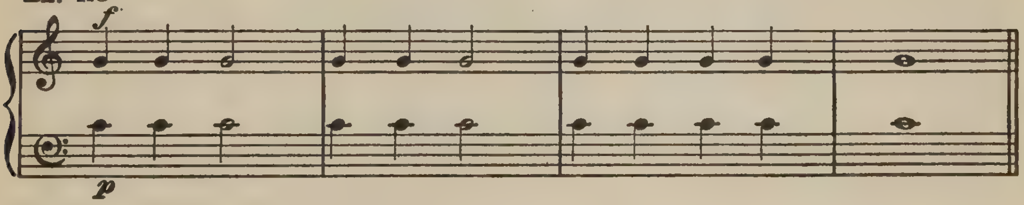
**CHOPIN**, *Nocturne, Op. 9, No. 2*



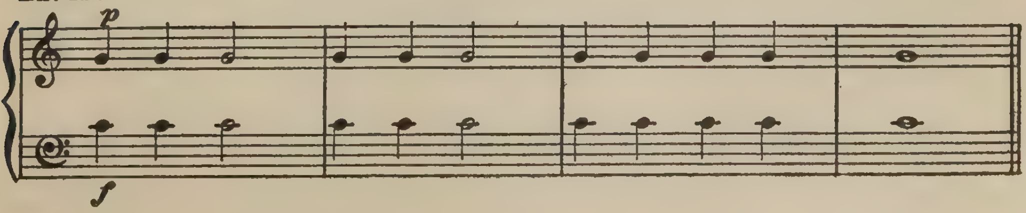
If we cannot make the right hand louder than the left hand, the effect will be inartistic. The making prominent of a single melodic line against a background of chords is perhaps the easiest of the many problems in part-playing; and in its simplest terms this implies playing one note in one hand simultaneously with another note in the other hand—one note being played more loudly than the other.

The following exercises will help in this connection:—

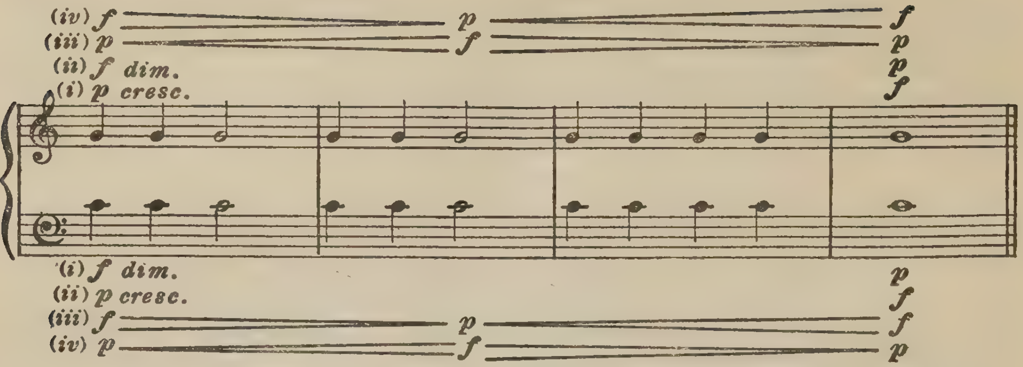
**Ex. 113**



**Ex. 114**

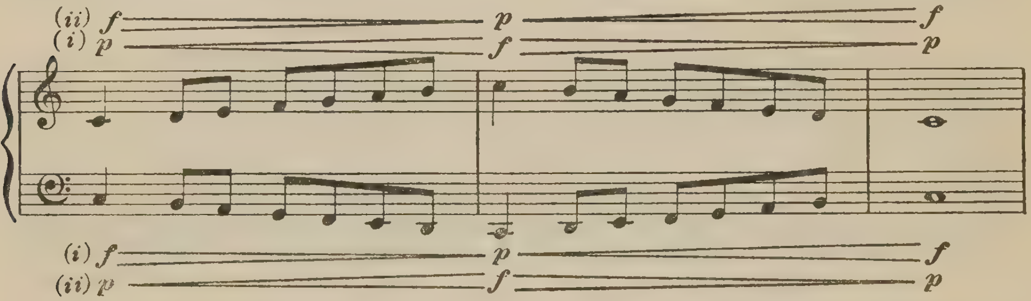


Ex. 115



and with other intervals and rhythmic patterns

Ex. 116

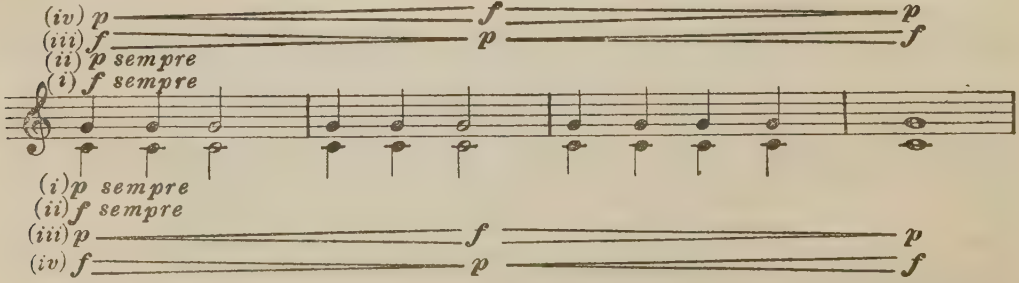


and other exercises on similar lines

When commencing the study of these exercises, you should make the difference in the degree of loudness between the two hands fairly considerable, and later this difference should be reduced gradually, until one hand is only just noticeably louder than the other. You may think that these exercises are elementary, but unless you can do them *really well*—and this means the obtaining of any desired *proportion* of tone between the two hands—all more complicated part-playing will be impossible.

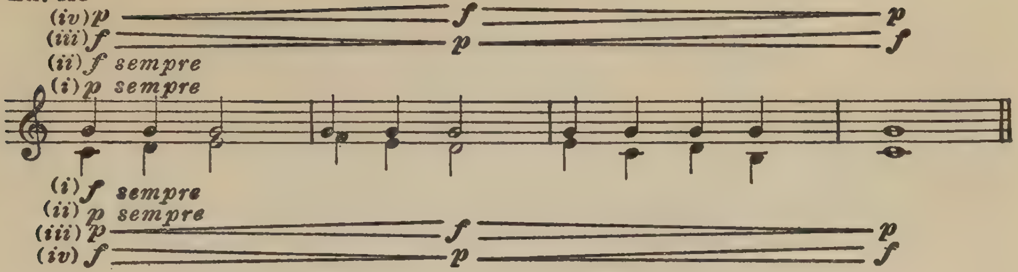
The next stage in part-playing occurs when we are called upon to play two notes, one louder than the other, *and both in the same hand*. This is clearly more difficult. It is, in fact, sufficiently difficult to present a stumbling-block to a great many players whose facility in other directions may be quite advanced. The following exercises will help in this connection:—

Ex. 117

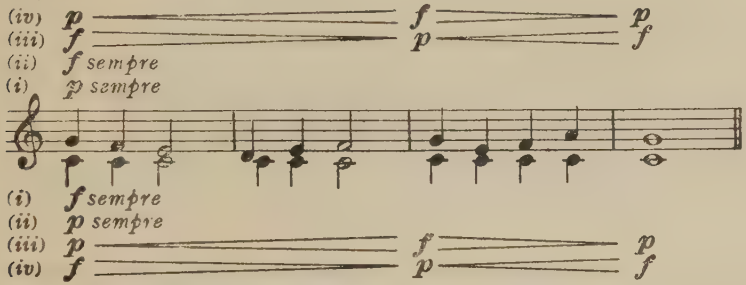


and with other intervals and rhythmic patterns
and similar exercises for the left hand

Ex. 118



Ex. 119



Similar exercises for the left hand.
Also with other intervals and rhythmic patterns.

Since we are now dealing with intervals, the arm touch, which I have already described, will be brought into operation. In part-playing of this description the position of the forearm is of importance. Suppose we are playing with one hand an interval in which the two notes are required to be of equal loudness. We shall presumably adopt a horizontal position of the hand, and the degree of firmness in each of the two knuckle and finger joints concerned will be approximately the same. Suppose now that we wish to play the top note more loudly than the bottom. If we tilt the forearm slightly in a rotary direction towards the little finger side of the hand—I am speaking, of course, of the right hand in this instance—the top note will, other things being equal, sound more loudly than the lower one.

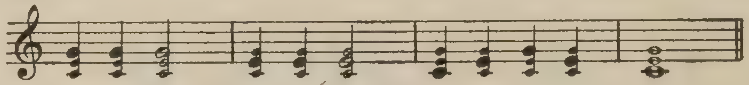
Again, if we tilt the forearm in the reverse direction and slant it towards the thumb side of the hand, the lower note will sound more loudly. If, in addition, we endeavour to make the particular finger which is to play the loud note even more rigid than the finger which is to play the soft one this will help in increasing the tonal difference between the two notes.

You may find when you start on these lines that one note may sound slightly in advance of the other. If this does happen, you should not pay too much attention to it in the early stages, but you should try gradually to make them sound simultaneously, and, in the course of a short time, I do not think you will find much difficulty. As in the earlier set of exercises, start by trying to make the tonal difference between the two notes considerable, and gradually aim at obtaining all possible shades of difference.

A third, and still more difficult stage in part-playing is reached when we are faced with the problem of playing more than two notes—say three or four—with the same hand, and playing one of these notes more loudly than the others. Now, you will easily see that the tilting of the forearm which works so well when an interval has to be played, cannot be brought into operation if it is any of the middle notes which have to be made prominent. It is here that we have to rely partly on making the finger corresponding to the prominent note more rigid than the other fingers; and also upon one other technical process which I will now explain in a little more detail.

Suppose you are playing a chord and commencing your key depression with the fingers resting on the surface level of the keys. In these circumstances the level of your fingers will be exactly the same, since the surface level of the keys is the same throughout the keyboard. If now there is an equal rigidity throughout all the fingers concerned, the notes will sound of the same degree of tone. Suppose now that you so arrange matters that before you start to play your chord (in this case you should start just slightly above the surface level of the keys) one finger is placed at a slightly lower level than the other fingers. In this case the ultimate effect, provided that this lower finger is kept sufficiently rigid, will be that the note that it plays will be louder than the other notes. Actually, under these conditions, the loud note will sound just a trifle in advance of the others, but provided the difference in the level of the fingers is not too great, the effect will not be as if the loud note occurs earlier than the softer ones, but will be, in fact, what is required—namely, that this particular note will be louder. The following exercise is designed to provide help in such passages :—

Ex. 120



And similar exercises for the left hand.

In this exercise the notes engraved in large type should be played more loudly than the notes in small type.

When you have mastered all these exercises, you are unlikely to find any passage in piano music which you will be unable to master successfully.

In Figs. 132 to 137 I have selected some typical passages from the Fugues of Bach which will give you additional practice in complex part-playing, and the continued study of works of this description will increase your facility in this respect. In these extracts the notes which should be made prominent are engraved in larger type than the notes which have to be played more softly.

*Fig. 132*

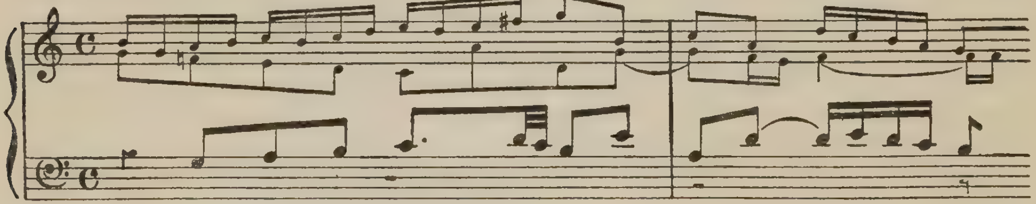


*Fig. 133*

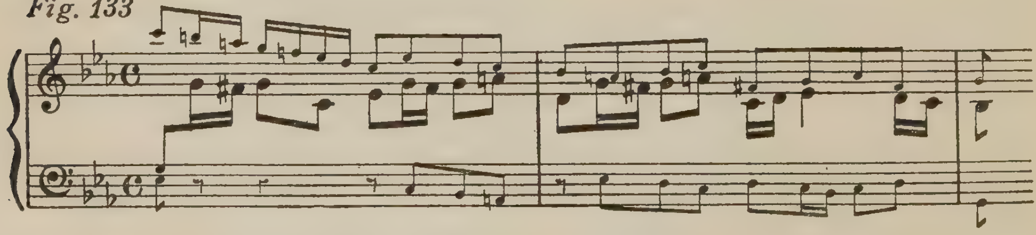


*Fig. 134*

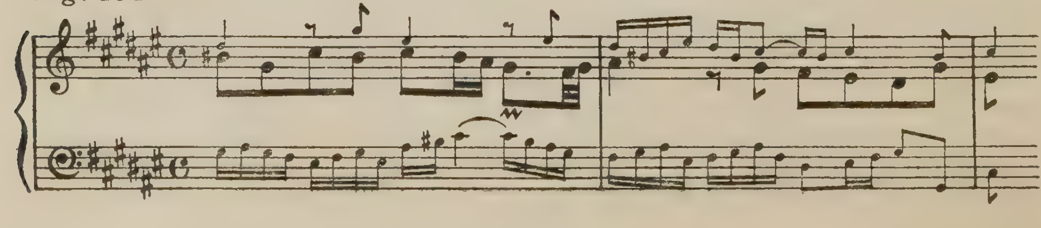


Fig. 135

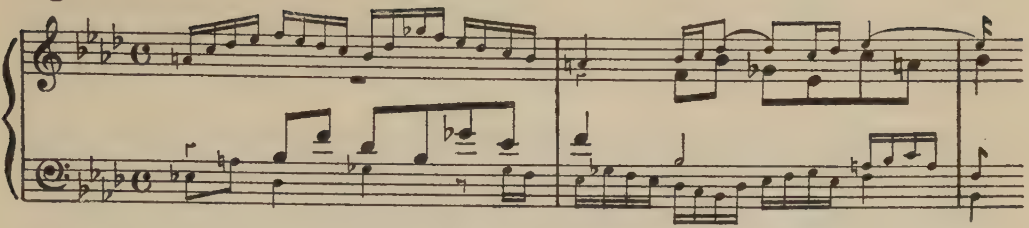


Fig. 136

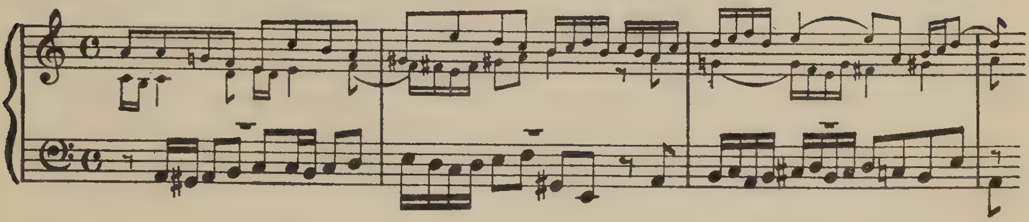
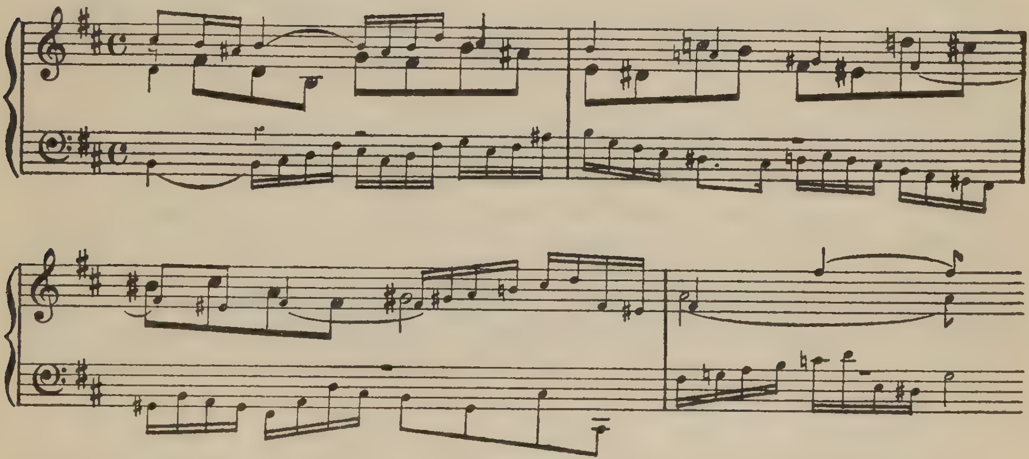


Fig. 137



In fugal work we are not, of course, concerned with merely thumping out of the tune. All the parts must be artistically balanced, and, moreover, the tunes must sound like tunes; that is to say, the notes in each must be artistically connected. Every effort must be made to achieve this result. This particular subject is outside the range of an article such as this, but I will give you just one piece of advice: If there is a tune which has to be brought out, as occurs so frequently in all fugal work, it is often a good plan to play this tune through by itself—that is to say, without the other parts. In this way you will get a sense of its artistic continuity; and unless you have this effect in your *mind*, it stands to reason that you are unlikely to be able to reproduce it with your *fingers*.

This brings me to one last point. Whenever you are practising part-playing exercises, or actually trying to produce part-playing effects on the keyboard, remember to play sufficiently slowly in the early stages, so that, before the playing of each note interval or chord, you give yourself time to visualise, to hear mentally, the effect which you want ultimately to produce. Unless you do this, your whole practice will be haphazard, since all interpretation implies the production of an effect which is existent in the mind of the performer. Hear the effect you want to produce, realise how you want to produce it, and listen with the utmost intentness so that you may be able to judge whether or not you have produced the effect you desire. In this way you are bound to progress.

## THE HIGH-SPEED ASPECTS OF FINGER TOUCH AND THE VARYING MUSCULAR CONDITIONS WHICH ACCOMPANY VARIATIONS OF SPEED.

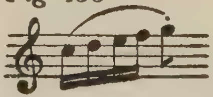
Contrary to the general belief, the inability to execute really rapid finger passages is not as a general rule due to stiff fingers, or the *inability* to make sufficiently rapid finger movements. It is largely due to quite different causes, and, moreover, to causes which are in a great majority of cases unrecognised and unsuspected. You can easily prove this for yourself by imagining that you have a very fast finger passage to play, and executing the movements on a table. You will find, in all probability, that you can move your fingers at a speed which is sufficiently high to execute almost any passage that has ever been written! This indicates that it is not the actual movements of your fingers which are at fault. There are three fundamental causes which underlie the inability to execute, with any degree of certainty, the most rapid types of finger passage. Of these, two are psychological and one is physiological.

Let us deal first with the two former.

The first of these we can solve by an analogy from another series of actions which we can all perform at high speeds with fluency and accuracy—the act of reading aloud. Now, the ability to do this depends, of course, partly on practice, practice which we all had when we were learning to read, but more particularly upon the fact that when we read quickly we take in and read our words in groups, and not in an isolated fashion. The small child learning to read does not do this. On the contrary, he focuses his conscious attention upon each word in turn, with the result that he reads slowly, and his reading lacks continuity, flexibility, and tonal inflections. Suppose we take such a simple group of words as "In the house." The child learning to read uses the same tone on each word and proceeds deliberately "In"—pause—"the"—pause—"house." Now, the adult does not read this way, because in reality he sees not three words, but one; and, as a result of seeing one large word, so to speak, he uses what might be described as one "thought-impulse" to direct the necessary physiological process concerned with the speech organs, and the result is fluency, high speed if desired, and some degree of tonal inflection.

Now let us turn to music. Suppose we have such a simple passage as the following:—

*Fig 138*

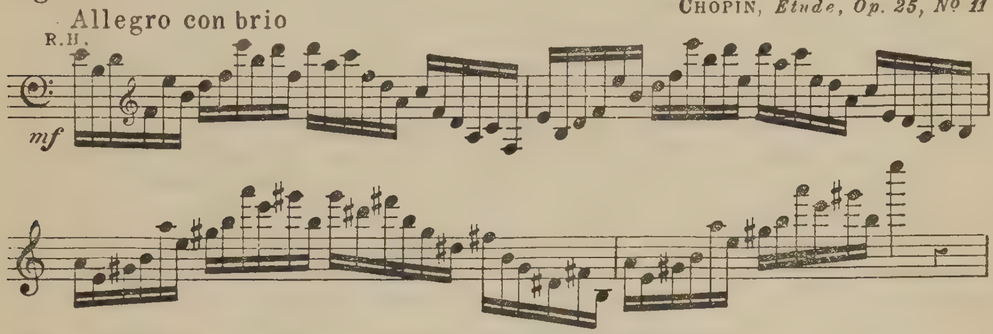


Again the small child sees five notes, concentrates its attention upon each note in turn, and gives a separate thought-impulse to the playing of each note. The experienced pianist does not do this. He sees, if he wants high speed, not five notes but one, not five actions but one, and thus all five notes are directed mentally by one thought-impulse, all five actions being contained in and directed by this one single conscious thought. Now, all of you who are reading this article will find such a passage as the above perfectly easy to play, and perfectly easy to memorise at a glance. Try to experiment, therefore, with it on these lines. Start by thinking consciously and deliberately about the playing of each single note. You can, if you like, play it as fast as you are able under these particular conditions. You will find that at the best only a moderately rapid speed can be attained, provided that you do really carry out the thought-individualisation process conscientiously. Now try the other way. Imagine beforehand what you have got to do. Think the finger sequence through to yourself mentally before you start; prepare your hand over the keyboard; "ready"—"steady"—"one thought"—go!! You will probably be quite astonished at the rapidity with which you are able to execute this passage.

So much, then, for such a simple passage as this. All passages, however, are by no means as simple.

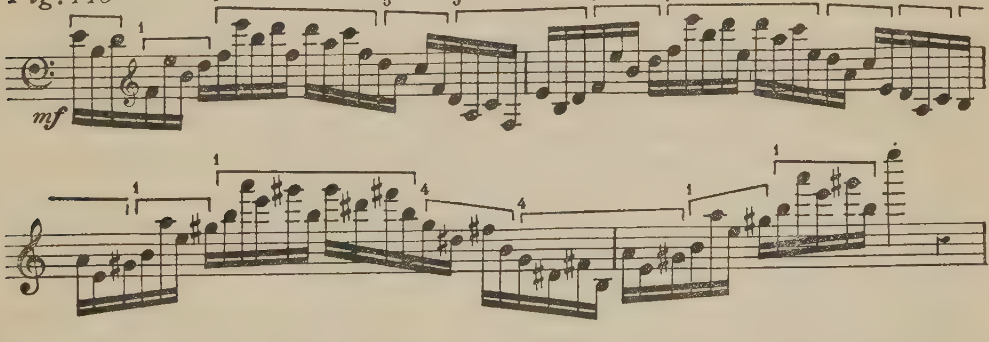
Suppose you have one as complicated as the following:—

*Fig. 139*



You may quite well say, "No psychology in the world can help me to overcome the difficulties encountered in this passage." And yet most of its difficulties are difficulties of the mind rather than of the body. Before going farther, I am going to re-write this passage, and, without altering any of the notes, set them out into groups, the basic plan for such grouping being that in every group only one arm position is needed. In other words, once you have placed your arm in a comfortable position for any one group, you can play every note in it without any lateral shift of the arm. (See Fig. 140.) Now, you ought to notice even at this stage that the passage presents a very different aspect. Taking each group singly, the whole thing looks a great deal less formidable. Suppose you take the first group. Surely if this occurred separately it would be easy enough to play, especially if you remember the psychological principle that I have just mentioned, of playing all the notes under the direction of one thought-impulse. If you admit this, what about the next group? Surely the same thing applies. Thus any difficulty that there may be in this passage lies not in the finger movements, but in the shifting of the arm from one position to the next, and in the doing of this quickly and accurately. Once you get your arm into the right position, each group is easy. If you do not get the right position, and, moreover, if you do not make the change of position at the right time, no amount of practice will ever secure facility and safety.

*Fig. 140*



Complicated finger passages of this description, therefore, need analysis on the basis of grouping together notes which can be played with *one position of the arm.* This is the first stage.

When this analysis has been accomplished—and I strongly urge the use of a pencil to mark the groups rather than relying upon memory—the next stage is to practise each group separately until the necessary speed can be obtained for each group, and then to join up the groups, making a deliberate pause between the playing of each group to allow the mind time to estimate how far the arm has to be moved, and so that the eye can follow this shift of the arm and see this movement relative to the keyboard. The length of the pause between the groups should then be gradually reduced until the whole passage is performed without a break. If this procedure is adopted—and I cannot urge too strongly that it should be in every difficult finger passage—the majority, if not all of the difficulties will vanish.

Now for our physiological problem.

This concerns largely the condition or degree of firmness which is to exist in the finger knuckle and wrist joints. It is a fundamental law of technique that the quicker the finger sequences the firmer must be the condition of these joints. Moreover, the louder the tone produced by each finger the firmer must be these joints. It is thus important, in executing fast finger passages, to make certain that you have just the right degree of firmness which will enable you to execute the passage with the maximum efficiency. Since either too much firmness or too little will handicap you seriously, this is a matter largely for individual experiment with every passage that you meet. If the passage is not progressing to your satisfaction, try first increasing your firmness at these joints, and then, if this does not improve matters, try decreasing it. Remember, however, that shoulder firmness is never required in FINGER passages, and that the firmness mentioned above refers largely to finger, knuckle and wrist joints, and in a certain (though less) degree to the elbow joint.

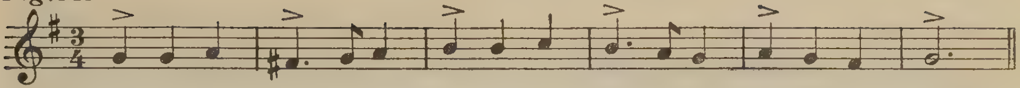
## SOME GUIDING PRINCIPLES OF INTERPRETATION.

Up till now we have in this article discussed almost entirely the means by which the artistic ideas of the performer may be expressed through the instrument. This we call " technique." Technique of itself, however, will not produce art. There is an additional factor in playing which we call interpretation, which means not only playing the right notes in the right time, but something very much more. It means making these sounds produce an effect of beauty.

Now, as I said in the very first chapter, no printed words can teach interpretation. Indeed, even personal tuition can only help to bring out and develop whatever gift of interpretation the performer happens to have been born with. There are, however, a few general principles of interpretation which can be expressed through the printed word, and which may help in the development of the performer's individual powers.

*Rhythm.*—Rhythm may be described as the vital factor in music. Unless a sense of rhythm is expressed in playing, all music will sound lifeless, dull, and colourless, even though it is played quite expressively in other directions. One might almost go so far as to say that without rhythm there is no music. Rhythm is a regularly recurring throb or pulse which manifests itself in actual playing by means of a slight stress or accent occurring at regular intervals. Rhythmic accents differ from other forms of accentuation in that they are invariably regular in their occurrence. In many cases the rhythmic accent falls on the first note of each bar. Now, suppose you take such a simple tune as " God Save the King," and play it first without any accentuation whatever. If you are musical, you will probably find it rather difficult to eliminate the accents. You should attempt this, however, merely to show yourself how dull the effect is if the normal rhythmic accent is not given. Now play it again and deliberately accent the first note of each bar as shown in Fig. 141.

Fig. 141

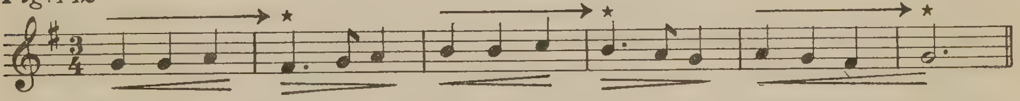


If you do this conscientiously—that is to say, if you do nothing in the way of interpretation except accenting the notes indicated—you will find that the effect is certainly better than formerly, but you will probably realise that something is still lacking. The notes are correctly accented, but even this does not seem to produce quite the right effect. Thus it would appear that although accent is necessary for the expression of rhythm, the expression of rhythm does not depend entirely upon accentuation. Some other factor is necessary. This is what we call technically "progression," and this factor is so important that we must discuss it in some detail.

Music, as opposed to such arts as painting and sculpture, is an art which expresses definite movement in time, movement from note to note, from bar to bar, and from phrase to phrase, until finally the whole conception is complete. Thus, if a piece normally takes, for example, ten minutes to play, if we play for only five minutes we cannot obtain a complete conception of the work, because we have not allowed ourselves enough time to complete the process of movement. In the musical journey each rhythmic point—that is to say, each note which is given a rhythmic accent—marks a definite stage in the whole journey, and between each rhythmic accent there must be in the mind of the performer the conception of a definite progression or moving forwards from one stage to the next; a sense of anticipation, as it were, a sense that one is always going somewhere to some definite point in time.

All this may sound a little vague when expressed in words, so I add something a little more definite. The sense of progression is often obtained not merely by a feeling of movement, but also by means of a very slight crescendo towards each rhythmic point. Let us try to express this in the playing of the tune we have already considered. Before doing this we must realise that there are in music both strong and weak rhythmic points, in the same way that in our language there are strong and weak stresses given to certain words and syllables. In the illustration below I have written out our tune again, and marked with a star those notes upon which the strongest accentuation falls. Weaker accentuations will take place on the first beats of the alternate bars. Now, let us play this tune through once again. The moment we have played the first note we must realise that we are going forward with the definite object in view of reaching the first strong rhythmic point, which is the first note of the second bar. I have marked this with an arrow to indicate the progression, and also with a *crescendo* mark which will help to bring out this sense of progression. When we have reached this point, a slight *diminuendo* is advisable, and then we start once again to progress towards the next strong rhythmic point with another slight *crescendo*, and so on.

Fig. 142

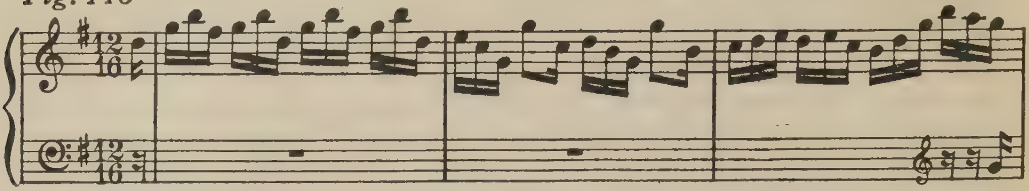


Now, this is only the barest possible outline of the meaning of rhythm in music. An attempt to deal with this question fully would require an article the length of a good-sized book! The point I hope to have driven home is that unless you play rhythmically you will not be able to give pleasure in playing either to yourself or to your listeners. The frequency with which rhythmic pulses recur varies with every piece, and frequently with different sections in one piece, and thus no rules can be given which will help you to decide upon this important point. It is a matter for individual experiment with every piece. Moreover, it is very much a matter of personal taste, and if any one piece were given to several musicians, we should probably find them expressing different views with regard to the frequency of recurrence of the rhythmic pulses.

Consider the following example :—

*Fig. 143*

**Bach,** *Gigue from French Suite in G major*



It is just possible that we might imagine one rhythmic pulse in every bar occurring on the first beat; or two in every bar, occurring in this case on the first and third beats; or even four The effect, of course, would be different in these three cases, and a choice can be made only when all three have been tried. Thus it is essential, when studying a work, for the performer to decide for himself how frequently the rhythmic pulses occur.

*Contrast.*—Another essential factor in interpretation is contrast. Without variety there can be no interest, and this applies to music just as much as it does to life. The composer has provided contrasts in the shape of contrast of key, of time, of rhythmic patterns, of tempo, etc. The contrasts which the performer has to provide fall under the following main headings :—

Contrast of tone quantity.
Contrast of mood.
The factor of *rubato.*
Phrasing.
Contrast of duration (legato and staccato).
Contrast of rhythm. (Contrast obtained by varying the frequency of the rhythmic pulses.)
Contrast of tone colour.

Let us consider each of these points in a little more detail.

Contrast of tone is clearly important. It is obviously monotonous to play for more than a short time with one degree of tone. In most editions suitable markings are added which give the performer some suggestions for tone variation. These the performer can amplify or modify at his discretion. There is one additional point that I would like to mention : it is essential for the performer to have, as part of his technical equipment, the ability to obtain all degrees of tone, from the loudest of which the piano is capable of producing without harshness, to the softest. The wider the tonal range at the command of the performer, the better are his interpretative powers likely to be.

Contrast of mood is a more subtle form of contrast. It is less frequently indicated by markings than contrast of tone, although such markings as *maestoso, scherzando, giocoso, dolente,* are frequently found. These, when added to the text, give certain indications, but they are seldom sufficient to enable the unmusical or the casual performer to supply all the necessary mood contrasts. Thus, every piece has to be studied deeply if its full meaning is to be brought out. Consider the following examples :—

*Fig. 144*

**Chopin:** *Prelude in C minor.*

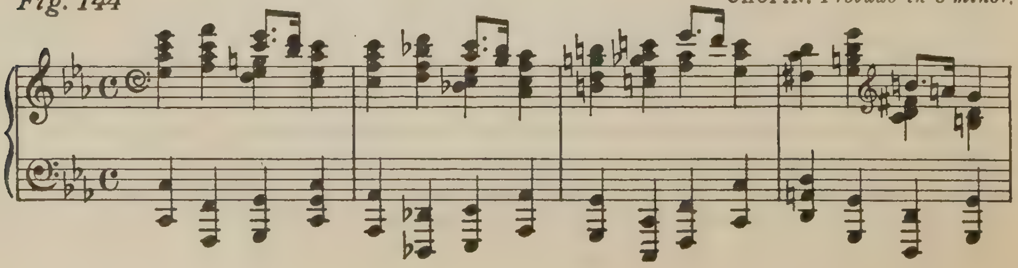
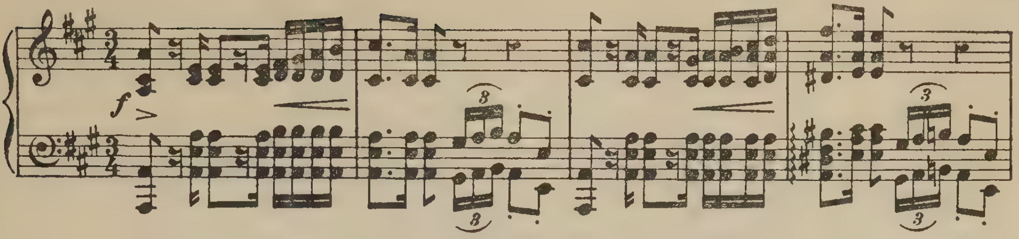


Fig. 145

CHOPIN: *Polonaise in A major.*



Play them both through. I have been careful to add no markings except those of tempo. The first playing of each example must surely indicate to the person with any degree of musical sensitiveness that the underlying mood or thought is entirely different. Our language is deficient in adjectives to describe the subtle shades of musical expression, but at any rate we might broadly describe the mood of the first extract as being sad and that of the second as being cheerful in character. Unless we realise this difference, our playing cannot be truly artistic. The question is a matter for each individual performer, and since the mood of a piece, especially of an extended work, frequently changes many times throughout the course of that work, some considerable study will be necessary. The endeavour to understand the underlying moods of a piece is one of the most fascinating adventures in music, and will amply repay any time and trouble.

The use of *rubato* is one of the most important of all the interpretative factors open to the performer. The simplest description of *rubato* is inflections or changes in the speed or tempo made for the purpose of a certain kind of expression. This question is extremely important, and it is not in general so widely understood as it deserves to be. Again, since it is a subtle point of interpretation, it is difficult to prescribe anything in the nature of rules with regard to its use, but a few guiding principles may be found valuable.

In the first place, any changes of speed which are made must not upset or interfere in any way with the regular occurrence of the rhythmic pulses, the importance of which we have already discussed.

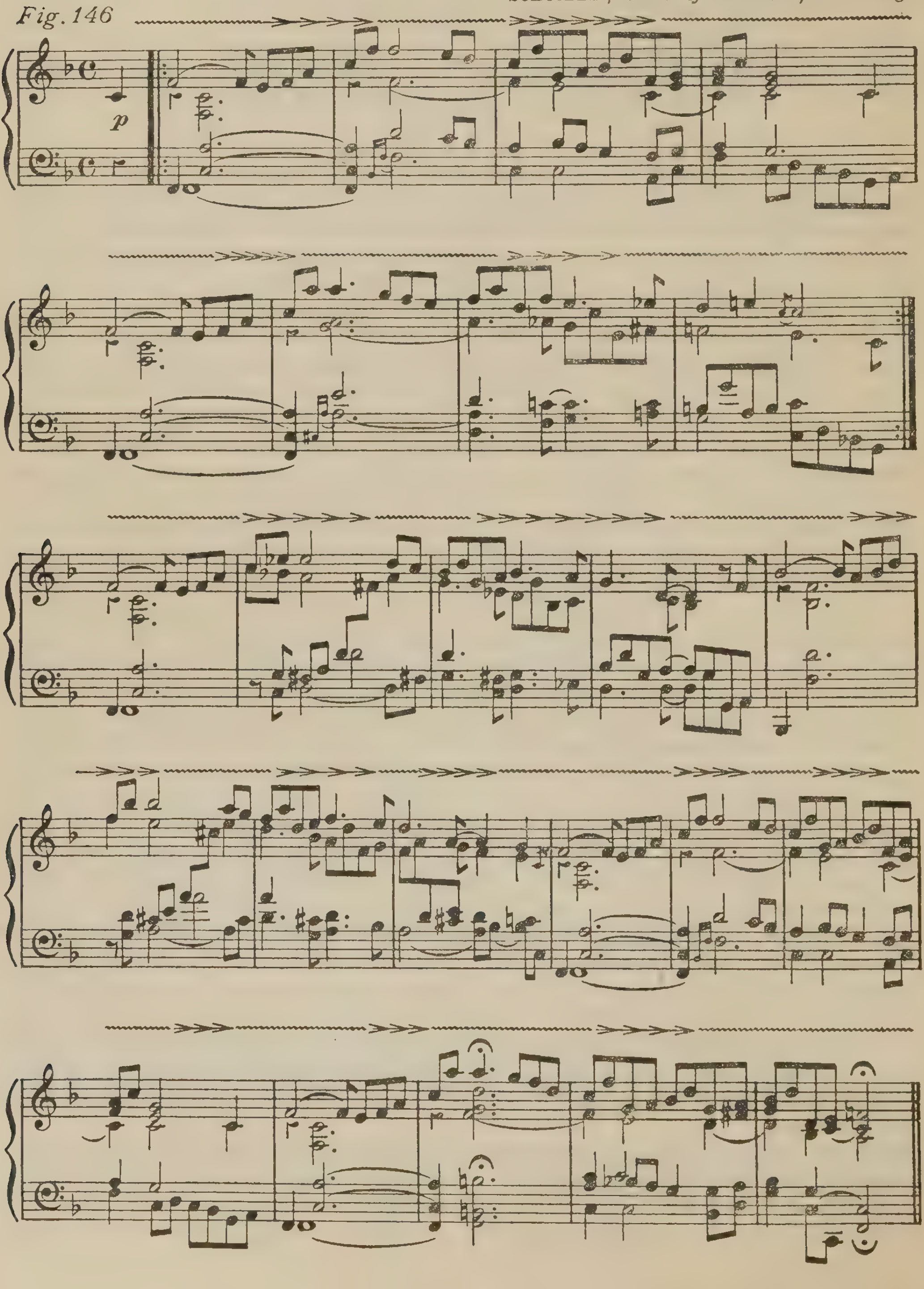
Let us study an example outside music. Suppose we are making a journey from one place to another on foot, and that journey occupies, at the normal walking pace, half an hour. If we set out with the idea of arriving at our destination exactly thirty minutes later, we can make the journey in two fundamentally different ways. We can either adopt a uniform speed throughout the entire journey, or we can vary the speed, going more slowly over some portions and faster over other portions in order to make up the time which has been lost. If we adopt the latter plan, a considerable number of variations in our speed are obviously possible. The whole point is that any time lost must be made up, and any time gained by hurrying must be compensated for by a corresponding slowing down, if the whole journey is to occupy thirty minutes, no more and no less.

So with music. The journey is in this case made between one rhythmic point and another, and the time at our disposal for the musical journey is the time which would normally be taken in playing from one rhythmic point to another if no inflections of speed were made. Provided, therefore, that the rhythmic points do not occur too frequently, or, in other words, if there is a sufficient *time* between each rhythmic point, it is quite possible, and in a great many cases desirable, that we should vary our speed between the points, but it is important that we should not take either more or less time when we make inflections of speed than we should do in playing the same passage *without* inflections. Thus *rallentandos* must be compensated for by *accelerandos*, and *vice versâ*.

On first consideration it might appear that an estimation of the necessary compensation would be an extraordinarily difficult procedure. But a little thought and experiment will show that this is not actually the case. In the following example I have indicated some suggestions for *rubato* effects which should be carefully studied. They indicate, it is true, only a few of the many possibilities, and in every case they give broad effects rather than subtle ones, since the extreme niceties of *rubato* cannot be indicated by markings. In this extract, the sign →→→→→ indicates a slight hurrying, and the sign ∿∿∿∿∿ indicates the reverse—a slight slowing down.

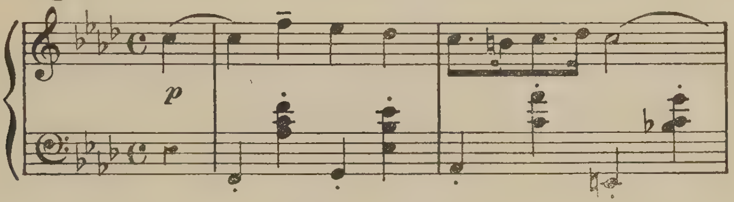
SCHUMANN, *Scenes of Childhood, "Dreaming"*

*Fig. 146*



It is important to remember, in all *rubato* effects, that deviations from the normal speed must not be made suddenly. All changes must be carried out as gradually as possible. Moreover, the change of speed should rarely be sufficiently great as to change, for example, crotchets into quavers or *vice versâ*. *Rubato* effects in general tend towards making music more emotional. They are therefore particularly suited to the more romantic composers, Chopin and his contemporaries. Such effects are, however, by no means limited to this particular school, but are used more or less broadly in most music. The performer will be helped considerably in deciding not only on whether *rubato* is possible, but also on the *degree* of *rubato* which is possible, by deciding upon the frequency of the rhythmic pulses, since, if these occur very frequently, there is obviously not enough time to make any inflections of speed without disturbing their regularity. Thus, for example, if in quick tempo there are four rhythmic pulses in every bar, it is impossible to obtain any change of speed without materially altering the regularity of the pulses. If, on the other hand, in slow tempo the rhythmic pulse occurs once in every bar, or even once in every two bars, or once in four, there is obviously much more time to allow for inflections of speed without the undesirable effect produced by interfering with the rhythm. Thus the question of rhythm is important from this point of view as well as from the points I have already mentioned in the consideration of rhythm as a separate factor above. Consider the following example :—

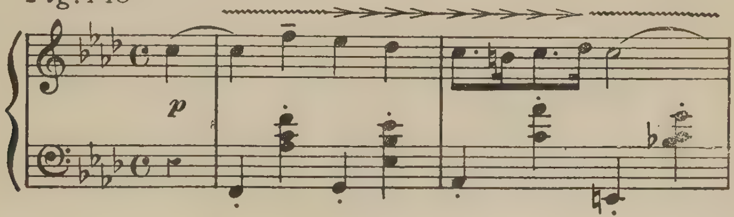
*Fig. 147*



**CHOPIN**, *Nocturne, Op.55, Nº 15, F minor*

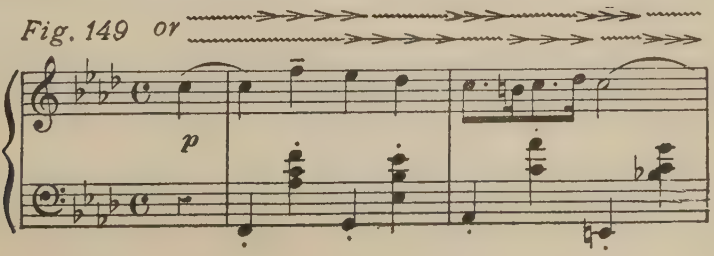
If we imagine that there are four rhythmic pulses in each bar, no *rubato* is possible at all. With two pulses in each bar *rubato* is hardly a practical proposition. With one rhythmic pulse in each bar we can obtain an effect such as that indicated below :—

*Fig. 148*



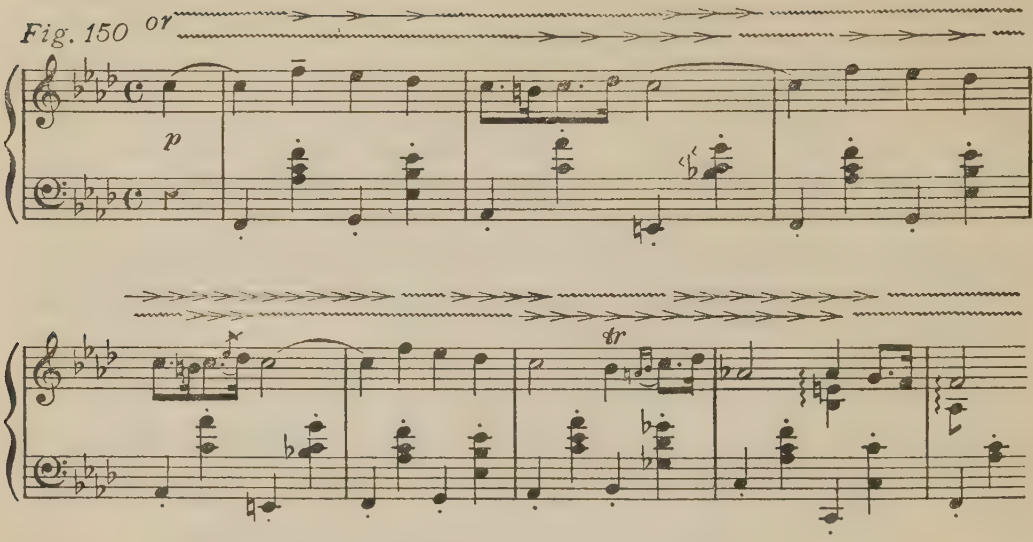
With one rhythmic pulse for two bars we have decidedly more scope, as shown in Fig. 149, and if we decide that there need be a rhythmic pulse only once in every four bars, our scope for *rubato* is almost limitless. I have shown some of the possibilities in Fig. 150.

*Fig. 149*



CHOPIN, *Op.55, Nº 15*

Fig. 150



As in all other branches of interpretation, *rubato* always resolves itself ultimately into a matter of personal experiment, and in this connection I would repeat the advice given in the chapter on " Method of Practice." Study your music frequently away from the instrument, study it by reading it in the same way as you would read and study, for example, a part in a play, when your study would certainly not consist entirely in reading your lines *aloud*. Remember that in studying in this way, technical difficulties are non-existent, and the imagination has its fullest possible scope.

Phrasing in music corresponds to punctuation in prose. If we read a passage aloud, either with no attention to the marks of punctuation or, alternatively, with the punctuation inserted in the wrong places, the effect is clearly not only inartistic, but in many cases entirely senseless. To a person with an understanding of music in any way comparable to the ordinary person's understanding of language, music which is either unphrased or phrased wrongly is equally inartistic and meaningless. The phrase markings given in even the best editions are seldom complete, and unfortunately in a good many cases are definitely incorrect. There are no rules with regard to phrasing which can be compared to the rules of punctuation in prose. Again it is a matter for individual experiment. Consider the following example, and play it through with the different phrasings which I have indicated, and notice the extraordinary difference in the results. In general, one might say that the majority of phrase markings shown in the text tend to bé on the short side, and that longer phrases are frequently desirable.

Fig. 151

BRAHMS: *Intermezzo, Op.116, Nº 6*

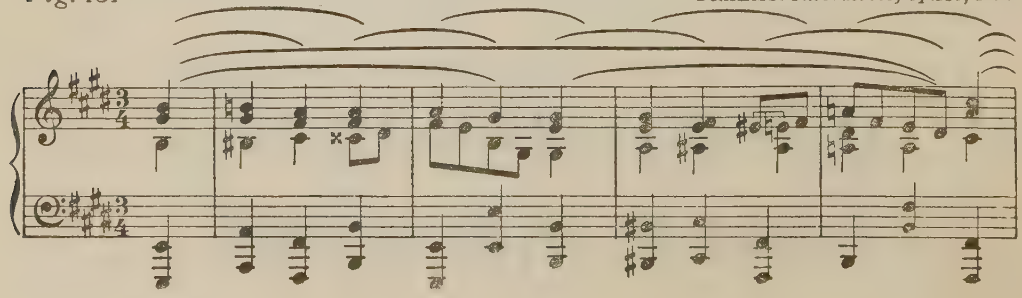
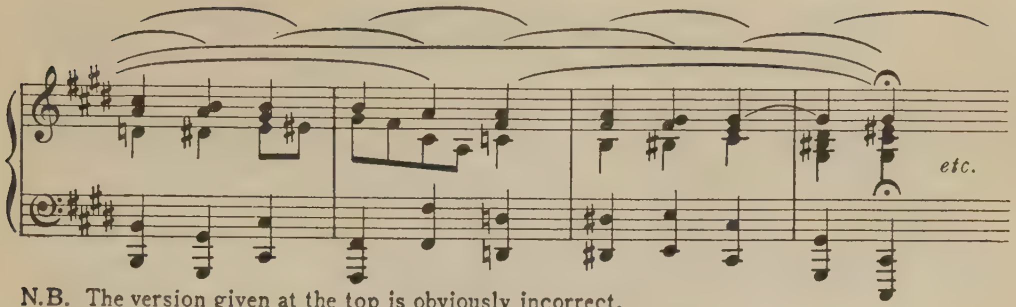


FIG. 151—*continued.*



N.B. The version given at the top is obviously incorrect.

The ends of phrases are frequently characterised by a *diminuendo*, in the same way as the voice tends to drop in approaching a full stop. The first note of the new phrase is frequently characterised by an addition of tone, in the same way as the voice is raised after a full stop. These indications are, of course, purely general, especially the one connected with phrase beginnings. The amount of tone which will be given to the first note of the new phrase must be regulated not only by the fact that it is the first note of a new phrase, but also with reference to its position with regard to the rhythmic pulse, the duration of the particular note, etc., etc. Thus, if the first note falls on a rhythmic pulse, it will clearly be given more tone than if it does not. If it falls on a note of long duration, the tendency should be to give it more tone than if it falls on a short note, and so on. Unfortunately, this question is too large to be discussed in any detail, but I would point out that, in addition to the other interpretative factors which I have already mentioned, that of phrasing needs the closest attention and experiment.

A very valuable and somewhat subtle form of contrast may be frequently obtained by contrasting *legato* with *staccato* effects. In many cases, markings indicating these effects are inserted in the text either by the composer or by the editor. Even when these marks are observed, however, there is often considerable additional scope for individuality of expression. A great many passages which have no particular markings to indicate the degree of *legato* or *staccato* are improved by small variations in the actual duration of each note. No rules can, of course, be given, and even a fairly exhaustive list of examples could show only a few of the possibilities. However, the student should bear in mind the importance of contrast obtained in this fashion, and should experiment frequently.

When an extended passage is built up on the same rhythmic pattern, contrasts and interest may be obtained by varying the frequency of the rhythmic pulses. The following prelude from the first book of the "Forty-eight Preludes and Fugues" by Bach forms an excellent illustration of the contrast which can be obtained in this fashion. I have given one version of many possible ones, marking with a short horizontal line the notes which are to receive a rhythmic accent. It will be noticed that in some bars I have indicated one rhythmic pulse, in some two, and in others four. In this way a piece consisting almost entirely of semi-quavers may be made interesting by contrasts of rhythm apart altogether from contrast obtained from tone and mood.

**BACH**, *Prelude, C minor, Book I*

*Fig. 152*

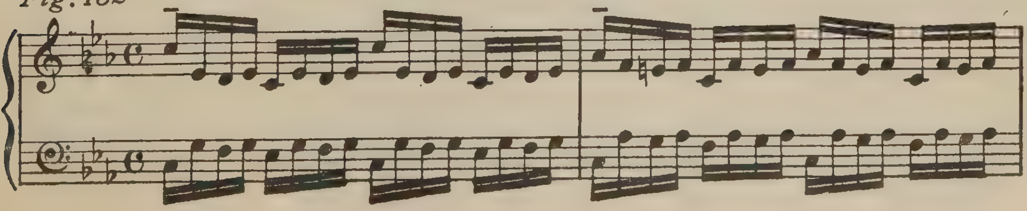
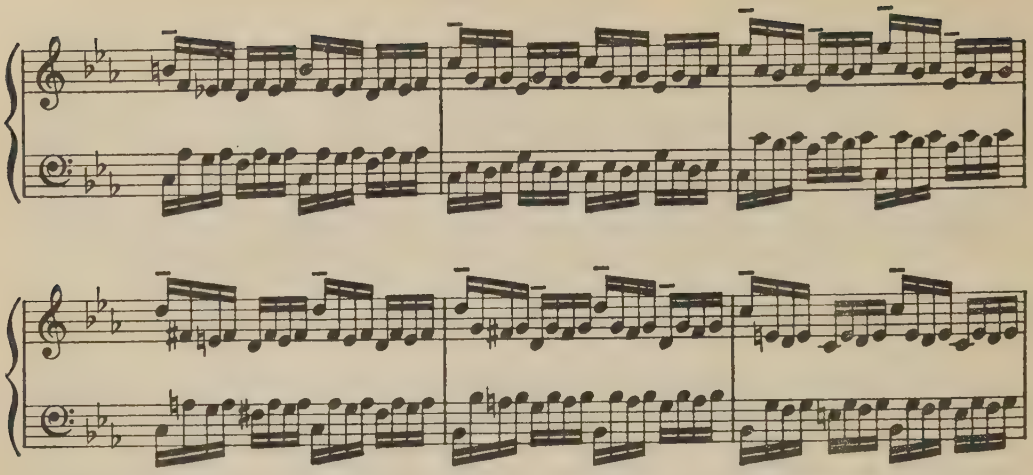


FIG. 152—*continued.*



Contrast of tone colour, or quality as it is sometimes called, is another valuable factor at the disposal of the performer. We speak of tone quality as being, for example, " full," " singing," " bright," etc. Formerly it had been supposed that these differences in tone quality (apart altogether from any differences in quantity) were obtained by differences in the manner of key acceleration. It was believed, for example, that if the key was jerked down, a hard tone would result, and that if it were depressed gradually, a full singing tone would result. Modern scientific investigation has proved that theories such as this are fallacious, and that there are two fundamental causes for differences in quality. The first of these is difference in quantity. Every different degree of *quantity* produces a slightly different *quality*, and thus the control of tone quantity is even more important than was suspected formerly. The second cause of qualitative differences is variation in the amount of non-musical noise produced in key depression. It is not generally recognised that a great deal of such non-musical noise is produced in all normal playing. The chief sources of noise are as follows :

1. The percussive noise made by the hammer in its impact against the string (apart from the musical sound produced thereby).
2. Noises due to friction in the various portions of the action.
3. The noise produced by the impact of the finger-tip against the key—and
4. The noise produced by the impact of the key against the keybed.

Now, with regard to the first and second of these, the performer can exercise little or no control, since for a note of any specific degree of loudness these noises will be approximately the same, irrespective of the manner in which the performer depresses the keys. The performer is, however, able, within certain limits, to control the amount of noise made by the finger against the key and by the impact of the key against its bed.

With regard to the former of these, it may be said that in general the larger the preliminary movement towards the key, the greater is the noise produced by the impact of the finger and the brighter the tone quality for any particular degree of loudness. Thus, when we are aiming at a bright quality of tone, fairly ample preliminary movements are desirable. On the contrary, when we are aiming at a less bright and more cantabile type of tone, the smaller the preliminary movements the better. When we are dealing with the loudest possible tones, it is in general advisable to make the preliminary movements as small as possible (consistent with obtaining the requisite degree of loudness), since very large preliminary movements in *fortissimo* playing tend towards harsh quality of tone.

With regard to the noise made by the impact of the key against its bed, this seems to be a desirable rather than an undesirable noise, helping to add definition or definiteness and also a certain body or fullness to the tone. Thus, the advice that I have previously given, to aim deeply into the key, and thus take each key fully down, is definitely desirable from the point of view of good tone quality. The actual tone quality required will, of course, depend in every case almost entirely upon the personal taste of the performer.

Finally, remember that the learning of the notes and the ability to play them accurately and at the required speed are only the beginning of things. We do not take the trouble to learn to play the piano merely for this, and the mechanical piano-player will in any case probably always do this better than we can. We learn the piano, and study the piano, for some far deeper purpose. We learn it because we have something to say musically, some beauty which we ourselves want to express which can be expressed only through sound. Technique is merely the means to this end, and is not the end itself. Without the means, the end is, of course, impossible, and by improving the means we shall be able to improve the end. Regarded in this light, the study of technique is all-important, but remember that it is the beauty of the music itself which matters most, and it is this search for beauty which is the fascinating and valuable part of musical study. The search becomes more and more interesting, as personality develops and as technique improves. Try never to be satisfied with your results, but always be striving for something better. You will find in this way that your musical life will become fuller, more interesting; and that, contrary to so many of the other pursuits and hobbies of life, the study of the musical art becomes more and more absorbing as life progresses.

# APPENDIX

## EXERCISES, STUDIES, AND PIECES

### EXERCISES

| | |
|---|---|
| *Czerny* | Op. 777, Twenty-four Elementary Exercises for Daily Use; Op. 848, Thirty-two Daily Exercises (edited Dunhill); Op. 337, Forty Daily Studies (edited Dunhill) (Augener). |
| *Biehl* | Op. 71, Daily Exercises (easy) (Lengnick). |
| *Plaidy* | Technical Studies (Augener). |
| *Somervell* | Ten Minutes' Technique (Curwen). |
| *Franklin Taylor* | Finger Exercises (two books) (Novello). |
| *Pauer* | Op. 74, Forty Daily Exercises (Augener). |
| *Hetty Bolton* | Twenty-five Technical Exercises for Daily Practice (Forearm Exercises for Rotary and Lateral Freedom, Hand Exercises, Finger Exercises) (Elkin). |
| *J. Michael Diack* | Ten Minutes Daily Exercises on Pianoforte Technique. (Paterson's Publications). |
| *James Ching* | Forearm Rotation (a simple and concise explanation of the Forearm Rotary Principle, together with 15 original photographs and 115 exercises) (Forsyth). |

## STUDIES

### *Elementary Grade (Very Easy and Easy)*

| | |
|---|---|
| *Walter Carroll* | Musical Exercises (interesting little studies which might equally be regarded as pieces); Twelve Studies (with notes and suggestions for performance); Six Easy Studies in the Olden Style (Forsyth). |
| *Whitemore* | Preliminary Selected Studies (with suggestions for performance) (Paterson's Publications). |
| *Bertini* | Op. 137, Twenty-five very easy Studies; Op. 100, Twenty-five Studies (Augener). |
| *Le Couppey* | "The Alphabet" (Twenty-five Easy Studies for small hands) (Augener). |
| *Czerny* | Op. 139, One Hundred Little Studies; Op. 599, "First Instructor" (Augener). |
| *Heller* | Op. 47, Twenty-five Studies (rhythm and expression) (Augener). |
| *Duvernoy* | Op. 176, Twenty-five Easy and Progressive Studies (Augener). |
| *Désirée MacEwan* | Selected Studies (with notes), Book 1 (Paterson's Publications). |
| *Loeschhorn* | Op. 65, Progressive Studies, Books 1, 2, and 3; Op. 192, Melodic Studies, Books 1, 2, and 3 (Augener). |
| *Stamaty* | Op. 37, Twenty-five Easy Studies for Small Hands (edited Dunhill) (Augener). |
| *J. A. O'Neill* | Progressive Steps (Modern Instructor). Two books (Rowland). |

### *Medium Grade*

| | |
|---|---|
| *Stamaty* | Op. 38, Twenty Studies (edited Dunhill) (Augener). |
| *Nancy Gilford* | Selected Studies, Book 2 (with notes) (Paterson's Publications). |
| *Bertini* | Op. 29, Twenty-five Studies; Op. 32, Twenty-five Studies (Augener). |
| *Heller* | Op. 46, Thirty Studies (Augener). |
| *Sterndale Bennett* | Op. 33, Preludes and Lessons (Augener). |
| *Whitemore* | Selected Studies, Book 3 (with notes) (Paterson's Publications). |
| *Clementi-Tausig* | "Gradus ad Parnassum." Selection (edited Dunhill) (Augener). |
| *Czerny* | Op. 299 (Langley), Books 2, 3, and 4; Op. 849 (edited Dunhill); Op. 740 (edited Dunhill), Books 1 and 2 (Augener). |
| *Loeschhorn* | Op. 66; Op. 194 (two books) (Augener). |
| *Le Couppey* | Sixteen Selected Studies (edited Dunhill) (Augener). |

### *Advanced*

| | |
|---|---|
| *Heller* | Op. 16, " The Art of Phrasing " (Augener). |
| *Felix Swinstead* | Selected Studies, Book 4 (with notes) (Paterson's Publications). |
| *Cramer-Bulow* | Studies (Augener). |
| *Sterndale Bennett* | Six Studies in the form of Capriccios (Augener). |
| *Czerny* | Op. 740 (Dunhill), Books 3 to 6; Op. 365, Virtuoso School (Augener). |
| *Moscheles* | Op. 70 (Augener). |
| *Henselt* | Op. 2, Twelve Studies (Augener). |
| *Schumann* | Op. 10, Paganini Studies ; Op. 13, Symphonic Studies in Form of Variations (Augener). |
| *Jensen* | Op. 32, Romantic Studies (two books) (Augener). |
| *Liszt* | Three Concert Studies; Paganini Studies; Études d'exécution transcendante (two books) (Augener). |
| *Thalberg* | Op. 26, Twelve Studies (two books) (Augener). |
| *Chopin* | Op. 10; Op. 25 (Augener). |

A useful collection of progressive studies by different composers is Thümer's New School of Studies. There are many books, ranging from the Preparatory Studies of Book 1 to those of the highest grade (Chopin, Henselt, Liszt, etc.). See Augener's Catalogue.

Franklin Taylor's Progressive Studies are arranged in groups—Five-finger Studies, Scales, Broken Chords, Velocity, etc. Those in each group are arranged progressively. See Novello's catalogue.

## PIECES

Teachers and Students will find much help in the graded catalogues now issued by several publishers. Breitkopf's Classified Guide gives a long list of works—mainly from the classics—in nine grades. An excellent series of modern pieces, under the editorship of Ernest Fowles, is published by Curwen. They are grouped: First Pieces, Primary Division, Elementary Division, Lower Division, Higher Division, Intermediate Grade.

In a catalogue of Russian Piano Music by Modern Composers, issued by Hawkes, the standard of difficulty of each piece is indicated.

An admirable series, edited by Thomas F. Dunhill (Edward Arnold) includes some attractive albums by modern English writers. They are graded according to the Divisions of the Associated Board Examinations.

Another graded series by living English composers—The Oxford Piano Series—is under the editorship of A. Forbes Milne (Oxford University Press).

The following lists of graded pieces are concerned mainly with the works of modern writers.

### *Elementary Grade (Very Easy and Easy)*

| | |
|---|---|
| *Carroll* | Scenes at a Farm; Tunes from Nature; The Countryside; Forest Fantasies; First Lessons in Bach (two books) (Forsyth). |
| *Ruby Holland* | Kensington Gardens; Cinderella; Five Little Pictures (Anglo-French Co.). Recreations (two books) (Winthrop Rogers). Ten Little Pieces for Beginners (Walsh). |
| *Felix Swinstead* | Five Idylls (Anglo-French Co.). Six Silhouettes (Keith Prowse). Five Cameos (Arnold). Five Miniatures (Augener). |
| *Stanley Wilson* | Hiawatha (Forsyth Bros.). |
| *Angela Diller* | Tunes from Many Lands; When all the World was Young; In Days of Old (ten folk-tunes, with suggestions for study) (Hawkes). |
| *Ernest Austin* | First Adventures on the Keyboard (two books); Playtime Pieces (four books); Folk-tune Studies (two books) (Larway). |
| *C. M. Spurling* | Miniatures; A Village Fair; Early Spring (Augener). Ten Little Pieces without Titles (International Music Co.). |
| *Dorothy Howell* | Pieces for the Bairns (Anglo-French Co.). |
| *Arthur Somervell* | Holiday Pictures (two books) (J. Williams). |
| *A. H. Brewer* | Wayside Sketches, Book 1 (Augener). |
| *Stanford* | Six Sketches (two books) (J. Williams). |
| *A. Carse* | Toyland Tunes; Old World Measures; Stepping Stones; English Tunes for Young Pianists (Augener). |
| *E. Mareo* | Stories without Words (two books); Five Little Pictures (Augener). Stray Thoughts (Elkin). |
| *Gerrard Williams* | A Little Suite (Elkin). Games (Lengnick). On My Own (Oxford University Press). |
| *Dunhill* | Five Short Pieces (Curwen). Old English Masters (two books) (J. Williams). |
| *E. Markham Lee* | The Windy Hill (Winthrop Rogers). The Water Babies (Ascherberg). Westward Ho! (Ashdown). Pleasantries (Cramer). |
| *A. Rowley* | Trifles; Stencils; The Changing Year (Ashdown). Outward Bound (Hawkes). |
| *Schafer* | A Pleasant Trip (Augener). |
| *Norman O'Neill* | Four Tunes of the Sea (International Music Co.). Four Little Dances (Oxford University Press). |
| *Langford Guest* | Random Tunes (Arnold). |
| *Colin Hood* | Jungle Tunes; Robinson Crusoe (Forsyth). |
| *Harold Craxton* | Tuneful Topics (Cramer). |
| *Cyril Scott* | Album for Boys; Album for Girls (Elkin). |
| *Wilfrid Sanderson* | Summer Days (Boosey). |

| | |
|---|---|
| *Percival Driver* | Six Dance Tunes (International Music Co.). |
| *R. Walthew* | Six Easy Diversions (Augener). |
| *Chaminade* | Children's Album (two books) (Enoch). |
| *Oscar Beringer* | Easy Classics (Bosworth). School of Easy Classics: Bach (two books), Beethoven, Chopin, Handel, Haydn, Mendelssohn, Mozart, Old English and French Masters, Scarlatti, Schubert, Schumann (Augener). |
| *Arthur Foote and R. Krentzlin* | Easy Pianoforte Classics: First Year Bach, Handel, Mozart, Haydn, and Beethoven (Lengnick). |
| *T. Keighley* | Playtime and Sonatina School. Primary, Elementary (two books) (Banks). |
| *Thümer* | Sonatina School, Books 1 to 6 (Graded Selections from Classical and Modern Sonatinas) (Augener). |
| *Chester* | Educational Series of Russian Music (Book 1) (Chester). |
| *Elkin* | Pleasure Pieces (three books; Cyril Scott, Roger Quilter, E. Austin, and others) (Elkin). |
| *Stanley Wilson* | Under the Willows (Forsyth Bros.). |

### *Medium Grade* (*Lower–Higher*)

| | |
|---|---|
| *George Dyson* | My Birthday; Prelude and Ballet (Arnold). |
| *Norman O'Neill* | Four Songs without Words (Anglo-French Co.). |
| *Ernest Austin* | Borrowed Melodies (Free arrangements of Folk-tunes in Five Books—Scottish, Swedish, Welsh, English, and Irish) (Larway). The Faery Forest (Arnold). |
| *Olive Turner* | Zoological Gardens (Banks). |
| *Swinstead* | Studies in Phrasing (Ashdown). Five Pastels (Bosworth). |
| *E. Mareo* | Storyettes; Idle Moments (Oxford University Press). |
| *Moore Park* | Four Lyrics (Anglo-French Co.). |
| *Geoffrey Shaw* | Miniature Suite (Arnold). |
| *Ethel Boyce* | Cinderella (two books) (Oxford University Press). |
| *Keighley* | Playtime and Sonatina School. Intermediate (three books) (Banks). |
| *A. Somervell.* | Pleasant Pastimes (J. Williams). |
| *Carroll* | Sea Idylls; In Southern Seas; Water Sprites (Forsyth). |
| *Gertrude Azulay* | First Adult Album; Second Adult Album (Enoch). |
| *Dom Thomas Symons* | Belinda's First Suite (Curwen). |
| *Eaglefield-Hull* | Echoes from Russia (seventeen selected and annotated pieces by Liadov, Scriabin, Glazounov, and others) (Hawkes). |
| *Gabriel Grovlez* | A Child's Garden (Chester). |
| *Edgar Moy* | Snapshots (Winthrop Rogers). |
| *H. Farjeon* | Three Fancy Dances (Bosworth); Two Little Waltzes (Forsyth); Night Music (Augener). |
| *James Ching* | Over the Hills (Forsyth). |
| *H. V. Jervis-Read* | Little Preludes (two books) (Elkin). |

| | |
|---|---|
| *T. F. Dunhill* | A Storybook (Anglo-French Co.). |
| *Colin Taylor* | Bubble and Squeak (Oxford University Press). |
| R. *Walthew* | Six Miniature Preludes (Anglo-French Co.). |
| *E. Couperin* | Favourite Compositions for the Harpsichord (two books ; edited and fingered by Alec Rowley) (Paxton). |
| *MacDowell* | Song Melodies (arranged by E. Austin) (Elkin). |
| *J. B. McEwen* | Sonatina (Anglo-French Co.). |
| *Bosworth* | Bach to Schumann (forty easy classics, graded) (Bosworth). |
| *Chester* | Educational Series of Russian Music, Books 2 and 3 (Chester). |
| *Betty Reeves* | Waterways (Forsyth Bros.). |
| *Gerrard Williams* | Four Traditional Tunes ; Traditional Scottish Tunes (three) (Oxford University Press). |
| *Maurice Besly* | Nocturne in form of a Waltz (Winthrop Rogers). |
| *Thümer* | Sonatina School, Books 7 and 8 (Augener). |

### *Advanced Grade* (*Moderately Difficult to Difficult*)

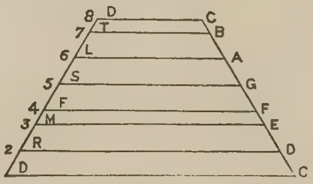
| | |
|---|---|
| *York Bowen* | Miniature Suite ; Second and Third Suites ; Humoresque ; Caprice ; Silhouettes (Anglo-French Co.). |
| *Balfour Gardiner* | Five Pieces ; Shenadoah and other Pieces ; Noël ; Shepherd Fennel's Dance ; A Sailor's Piece ; Humoresque (Forsyth). |
| *Julian Bautista* | Colores (Suite of Six Pieces) (Organ, Birmingham). |
| *Ruby Holland* | Two Bagatelles (Walsh). |
| *Swinstead* | Seven Preludes (Ricordi). |
| *Eric Fogg* | Faery Pieces (Elkin). |
| *George Dyson* | Prelude and Ballet (Arnold). |
| *Ivor Foster* | Three Preludes (Ashdown). |
| *Sibelius* | Selected Pieces (two vols.) (Chester). |
| *E. von Dohnányi* | Op. 11, Four Rhapsodies (Doblinger) ; Op. 17, Toccata (Simrock). |
| *E. Poldini* | Petit Décameron (ten pieces) (Lengnick). Petite Suite, Op. 97 (two books) ; Petits Morceaux Pittoresques (Bosworth). Episodes á la Cour (four separate numbers) (Augener). |
| *Schubert* | Album of Favourite Compositions (Bosworth). |
| *Elgar* | Song Melodies (arranged by E. Austin) (International Music Co.). |
| *Rhené-Baton* | Op. 13, En Bretagne (Durand). |
| *Dom Thomas Symons* | A Spring Suite (Curwen). |
| *Arthur Bliss* | Suite (Curwen). Two Interludes (Chester). |
| *Maurice Besly* | Studies in Tone Colour ; River Gardens (Winthrop Rogers). |
| *H. Farjeon* | Six Preludes (Paxton). Tone Pictures ; Pictures from Greece (Augener). |

| | |
|---|---|
| *A. Carse* | Three Preludes (Augener). |
| *Leo Livens* | Impressions (Augener). |
| *J. Holbrooke* | Celtic Suite (Paxton). |
| *I. L. Pavia* | Fandango Triste ; Bourrée all 'Antico (Augener). |
| *Sydney Rosenbloom* | Three Concert Studies (Augener). |
| *John Ireland* | The Island Spell ; Chelsea Reach ; Ragamuffin Equinox ; April (Augener). Rhapsody (Hawkes). Merry Andrew (Ascherberg). |
| *Paul Corder* | Nine Preludes (Anglo-French Co.). |
| *Moszkowski* | Album of Eight Pieces (Serenata, etc.) (Bosworth). |
| *Sgambati* | Op. 18, Four Pieces (Schott). |
| *Chester* | Educational Series of Russian Music, Books 4, 5, and 6 (Chester). |
| *Bosworth* | Album Classique (Selection of the Masters) (Bosworth). |
| *Frank Bridge* | Three Sketches (Winthrop Rogers). The Prince ; Three Poems ; Three Lyrics (Augener). |
| *Arnold Bax* | A Hill Tune ; Toccata ; Country Tune ; Gopak (Murdoch). |
| *Gabriel Grovlez* | L'Almanach aux Images (eight pieces) (Augener). |
| *F. Blumenfeld* | Twenty-four Preludes (Hawkes). |
| *Debussy* | Preludes (two books) ; Images ; Estampes (Durand). |
| *Rachmaninov* | Preludes (Gutheil). |
| *Scriabin* | Op. 11, Twenty-four Preludes ; Op. 8, Twelve Études ; Op. 13, Six Preludes (Hawkes). |
| *Sinding* | Op. 24, Five Pieces (Peters). |
| *Glazounov* | Op. 36, Petite Valse ; Op. 31, Three Études (Hawkes). |
| *Ravel* | Le Tombeau de Couperin ; Minuet (Durand). Menuet Antique (Enoch). Miroirs (Demets). |
| *Albeniz* | Op. 165, Tango (Schott). |
| *Respighi* | Antique Dances and Airs (Ricordi). |
| *Moussorgsky* | Pictures at an Exhibition (ten pieces) (Augener) |

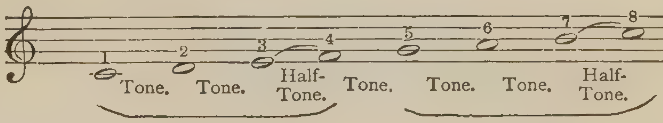
# CHAPTER IV

# HARMONY

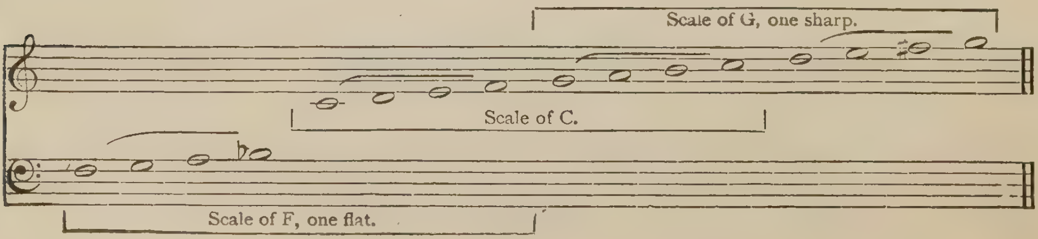
HARMONY may be roughly defined as the combination of the various notes of the scale according to certain rules: in other words, Harmony is understood to be two or more sounds heard at the same time, in contradistinction to Melody, which is a succession of single notes. The scale is the most important thing in music, for from it all music is built up. It is a series of sound starting from any given sound to its octave. The following illustration will show the Major Scale :—



Each step is called an interval, the smaller intervals being between the third and fourth, and seventh and eighth steps. The following is the scale of C in the old notation, showing the smaller intervals with a slur, thus :—



This scale being divided into two groups of four notes each, it is seen that the construction of each group, or tetrachord, as it is called, is identical. It will thus be clear that the upper tetrachord of the scale of C may be the lower tetrachord of a scale beginning on G, if we add four notes of a similar construction above it; and likewise the lower tetrachord of the scale of C may become the upper one of the scale of F, if we add a similarly constructed series of four notes below it. This is shown in the following illustration :—



## INTERVALS.

Intervals are always reckoned upwards ; and the number of names of notes they contain is always the number of the interval. Thus from C to E is always a third, because C, D, E, are three letters ; C to G is always a fifth, because there are five letters implied, C, D, E, F, G. Every interval from the key-note of the major scale is a major interval, excepting the fourth, fifth, and octave, which are called perfect, thus :—

C to D is a major second.
C to E is a major third.
C to F is a perfect fourth.
C to G is a perfect fifth.
C to A is a major sixth.
C to B is a major seventh.
C to C is a perfect octave.

This holds good of every major scale. In the scale of A—from A to C♯ is a major third, because C♯ is the third letter from A. In the scale of B♭—B♭ to G is a major sixth, because G is the sixth letter from B♭. Intervals one half-tone less than major are called minor, and intervals half a tone less than perfect are called diminished, thus :—

C to D♭ is a minor second.
C to E♭ is a minor third.
C to F♭ is a diminished fourth.
C to G♭ is a diminished fifth.
C to A♭ is a minor sixth.
C to B♭ is a minor seventh.
C to C♭ is a diminished octave.

This applies to all scales. A to C is a minor third, because C is half a tone less than C♯, which si the major third of A. D to A♭ is a diminished fifth, because the perfect fifth would be A.

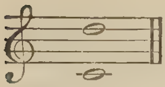
Intervals one half-tone greater than major are called augmented, and intervals one half-tone greater than perfect are also called augmented.

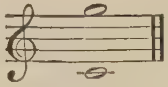
C to D♯ augmented second.
C to E♯ augmented third.
C to F♯ augmented fourth.
C to G♯ augmented fifth.
C to A♯ augmented sixth.
C to B♯ augmented seventh.
C to C♯ augmented octave.

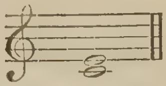
Intervals one half-tone less than minor are called diminished : thus C to E♭ is a minor third, C♯ to E♭ or C to E♭♭ would be a diminished third. The rule may be thus shortly stated :— One half-tone less than major makes the interval minor ; one half-tone less than minor or perfect makes the interval diminished ; one half-tone greater than major or perfect makes the interval augmented.

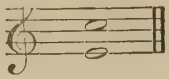
Intervals within the range of the octave are called simple. Intervals which exceed the compass of the octave are called compound. Thus (No. 1) is a compound second or ninth ; (No. 2) is a compound fifth or twelfth.

Intervals are said to be inverted when the lower note is raised an octave higher, or when the upper one is lowered an octave: thus C to E (No. 3) is a third. If we invert it, we have E to C (No. 4) a sixth. A very simple rule for the inversion of intervals is to make up the number 9.


No. 1.


No. 2.


No. 3.

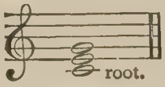

No. 4.

Thus C to D is a second: place C uppermost, and we have D to C, a seventh, because 2 + 7 = 9; C to F is a fourth: place C uppermost, and we have F to C, a fifth, because 4 + 5 = 9.

Major intervals when inverted become minor.
Minor „ „ „ major.
Augmented „ „ „ diminished.
Diminished „ „ „ augmented.
Perfect „ „ „ perfect.

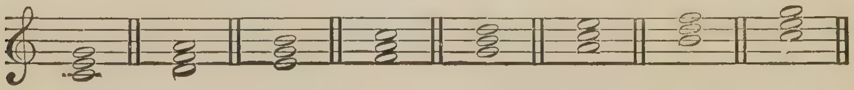
## COMMON CHORD IN ROOT POSITION.

The third is the most important interval in Harmony, because all chords in their root position are built up by a succession of thirds. The common chord consists of two thirds, the lowest note of which is called the root (No. 5). The name "triad" is usually given to a chord of three notes.



No. 5.

Let us build up a chord on every note of the scale of C, and then analyse the chords thus built.

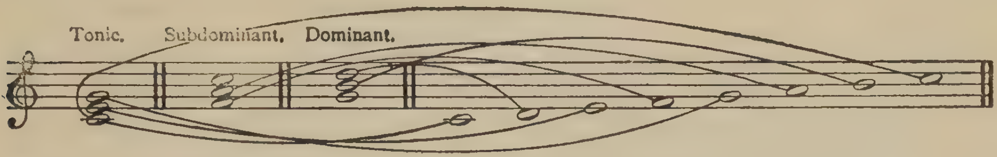


The technical names given to these chords are as follows:—The chord with C for its root is called the tonic. The chord with D for its root is called the supertonic. The next is called the mediant, the next the subdominant, the next the dominant, the next the submediant, the next the chord on the leading note, and lastly the tonic again. These same names are given to the seven notes of the scale on which the chords are built.

| Tonic. | Supertonic. | Mediant. | Subdominant. | Dominant. | Submediant. | Leading Note. |
|---|---|---|---|---|---|---|
| C | D | E | F | G | A | B |

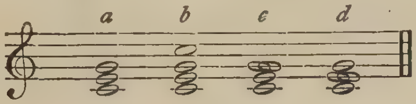
These examples are given in the scale of C for the sake of simplicity, but *they should be written out in all the scales.* Let us shortly analyse each of these chords. We find that the chord of C has its first third, C to E, major; its second third, E to G, minor; and its fifth, C to G, perfect. The chord on D has its first third, D to F, minor; its second third, F to A, major; and its fifth, D to A, perfect. The chord on the mediant has the first third, E to G, minor; the second third, G to B, major; and the fifth, E to B, perfect. The chord on the subdominant has the first third, F to A, major; the second third, A to C, minor; and its fifth, F to C, perfect. The chord on the dominant has the first third, G to B, major; the second third, B to D, minor; and the fifth, G to D, perfect. The chord on the submediant has the first third, A to C, minor; the second third, C to E, major; and the fifth, A to E, perfect. The chord on the leading note has the first third, B to D, minor; the second third, D to F, minor; and the fifth, B to F, diminished. These may all be summarised thus :—The triads on the tonic, subdominant, and dominant are major ; those on the supertonic mediant, and submediant are minor ; and the one on the leading note is called diminished.

Let us now see how the whole scale may be drawn from those three chords, tonic, dominant and subdominant.

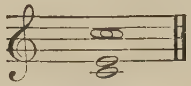


Thus we see that the first, third, and fifth of the scale are drawn from the tonic ; the second and seventh from the dominant ; and the fourth and sixth from the subdominant.

If we wish the chord to have four parts instead of three, as in the above example, we must double one of the other notes, thus (No. 6) :—



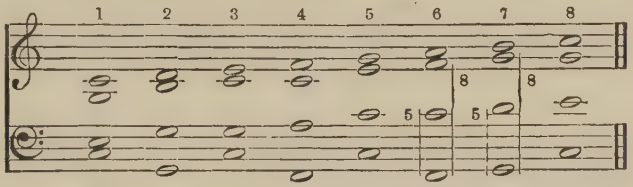
No. 6.



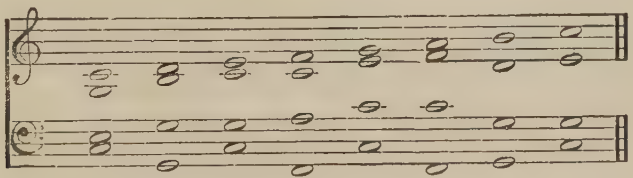
No. 7.

The best note to double in a common chord is the root (fig. *b*) ; the next best note to double is the fifth (fig. *c*) ; but the third should rarely be doubled (fig. *d*), the objection being stronger to the doubling of the major third than to the doubling of the minor. It is sometimes necessary to omit the fifth altogether, in which case the root is doubled twice, thus (No. 7), but the third is not usually omitted.

Let us give an example of the scale harmonised in four parts by the three major chords :—



It will be noticed that, between each chord, there is one note common to both chords, except between the chords on the sixth and seventh degrees ; and there we find glaring examples of those well-known errors known as consecutive octaves and consecutive fifths, the bugbears of all young musical students. These might be corrected in the following manner :—



It is obvious that any melody which remains in one scale or key can be harmonised correctly, if not artistically, by using only the tonic, dominant, and subdominant.

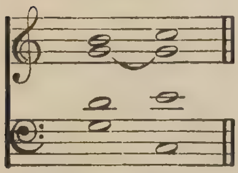
We shall look at the value of these three primary triads in connection with *Cadences*. If we examine the end of an ordinary hymn-tune, we shall see that the last two notes in the bass proceed from the dominant to the tonic. This is called a perfect cadence or full close. This full close will give a valuable example of how to make two common chords succeed each other. If there be a note common to both chords, *it is best kept in the same part.* Let it be understood, that a chord of four notes is said to be in four parts, the upper part being called treble, the second part alto, the third part tenor, and the fourth part bass. The following illustration will show the perfect cadence (No. 8). Here the note G, in the alto of the first chord, is held on in the alto of the second chord, while the other parts move to the nearest notes of the next chord. When the subdominant chord is followed by the tonic, the progression is called the *Plagal Cadence* (No. 9).

This cadence is easily remembered if the student realises that it corresponds to the " Amen " with which most hymns conclude.

In the middle of a musical sentence, when the dominant follows the tonic, the progression is called the imperfect cadence or half close (No. 10).

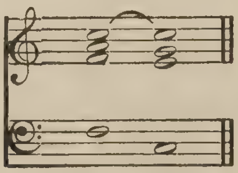
Those chords which have a connecting link between them are called *conjunct*. But between the subdominant and dominant there is no connecting link. These chords are therefore called disjunct, and are always a source of danger and trouble to young students. All chords on adjacent degrees of the scale will always be *disjunct*. When such chords are employed, the following rule will be a safe guide towards the prevention of faulty consecutives :—Always make the upper parts move in *contrary* motion to the bass, and let them proceed to the nearest note of the chord to which they are going, thus (No. 11). The minor chords upon the supertonic, mediant, and submediant are called secondary triads, and are all available in the major key, along with the primary triads. The chord on the leading note being dissonant is not a common chord, and it is never, or at least very rarely, used in its root position. A very good example of the use of a secondary triad occurs in what is called " the interrupted cadence." This cadence is formed when the dominant chord, instead of proceeding to the tonic—which would form the perfect cadence—proceeds to the submediant ; thus *interrupting* the expected perfect cadence. Illustration shows the interrupted cadence (No. 12). It will be noticed that the inner parts (only two of them in this case) go in contrary motion to the bass : had they not done so, there would have occurred consecutive octaves and fifths, which, though allowable (and even effective in certain circumstances), should be avoided by the student, especially in the early stages of his work.

*Perfect*



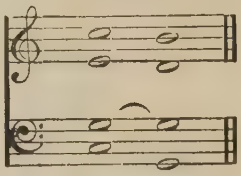
No. 8.

*Plagal*

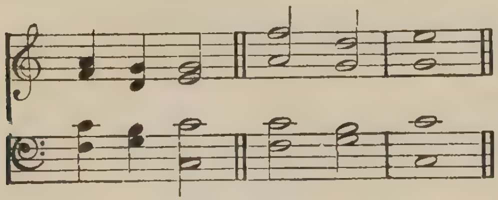


No. 9.

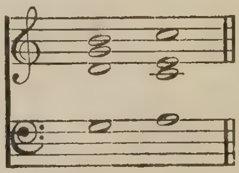
*Imperfect*



No. 10.



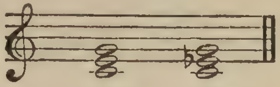
No. 11.



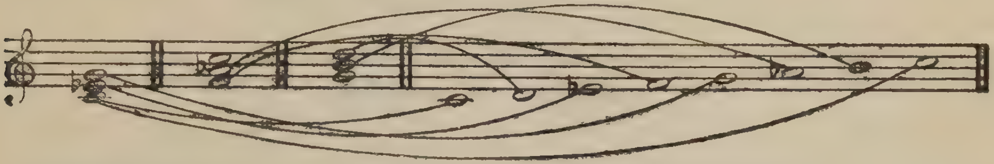
No. 12.

## MINOR SCALE.

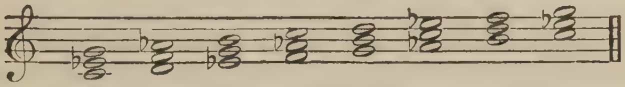
Let us now endeavour to draw out the minor scale, as we have done the major, from the three minor primary chords. We have seen that a major chord is built up with its major third first, and its minor third second. In a minor chord the reverse is the case: the minor third comes first, and the major third second. Hence it follows, that any major chord can be changed into a minor, simply by lowering the third half a tone, thus :—



Still in the key of C we shall now make the tonic and subdominant minor chords ; note that whether the key be major or minor, *the chord of the dominant is always major*. The semitones in this scale occur between the second and third, fifth and sixth, and seventh and eighth ; while between the sixth and seventh we have an augmented second, which is half a tone greater than a whole tone.



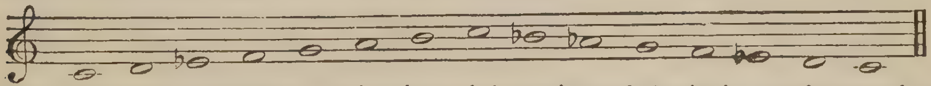
We shall build a chord on each note of the scale, and then analyse these chords.



On the tonic we have a minor chord, consisting of a minor third, a major third, and a perfect fifth. On the supertonic we have a diminished chord, consisting of two minor thirds and a diminished fifth. On the mediant we have an augmented chord, consisting of two major thirds and an augmented fifth. On the subdominant we have a minor chord, consisting of a minor third, a major third, and a perfect fifth. On the dominant we have a major chord, consisting of a major third, a minor third, and a perfect fifth. On the submediant we have a major chord, consisting of a major third, a minor third, and a perfect fifth. And on the leading note we have a diminished chord, consisting of two minor thirds and a diminished fifth.

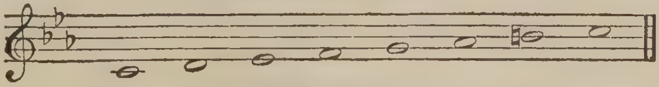
Of these the supertonic, mediant, and leading note are not used in their root position, leaving only the tonic, subdominant, dominant, and submediant for free use.

This scale is called the ***harmonic minor scale***. There is a modification of this scale, called the ***melodic minor scale***, where, in order to prevent the augmented second between the sixth and seventh, the sixth is raised going up, and the seventh is flattened coming down, the flattened sixth of the harmonic minor being also used in the descending scale.



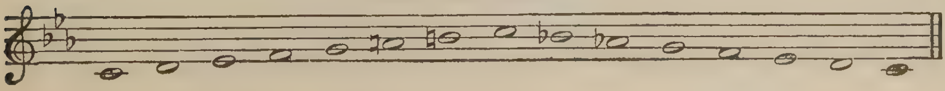
Every minor scale is called the tonic minor of the major scale beginning on the same keynote or tonic ; but it is also the ***relative*** minor of the major scale whose tonic is on the third degree above, and which is called its relative major, the signature of which major it always takes. Thus, C minor is the tonic minor of C major ; but it is also the relative minor of E flat major, whose signature it bears.

Harmonic Minor Scale of C.

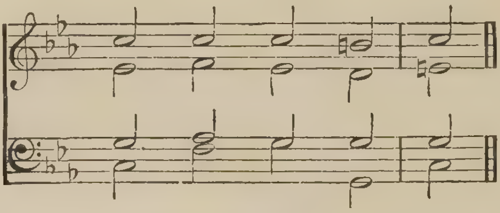


The same descending.

Melodic Minor Scale of C



The harmonic minor scale is the one on which all chords belonging to the minor key are founded. It will be understood that the dominant chord, whether the key be minor or major, is always major, because it contains the leading note of the scale. It not infrequently happens that the final chord in a minor key is written with a major third. It is then called a *Tierce de Picardie*, or Picardy Third.

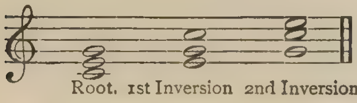


## INVERSIONS OF CHORDS.

So far as we have gone, we have shown chords only in their root position, that is, having the note on which they are built placed lowermost. When the root is taken away from its place as the lowest note of a chord, and is placed in one of the upper parts, the chord is then said to be *inverted* (No. 13).

When the third of the chord is in the bass, the chord is said to be in the first inversion; when the fifth of a chord is in the bass, the chord is said to be in the second inversion. When we speak of the bass note, we always mean the lowest note of a chord, however high or however low the chord may be placed, or whether that chord be in root position or appear as an inversion.

In figuring chords we always reckon each interval from the lowest, thus (No. 14), from C to G is 5, and from C to E is 3; the root position of every chord will therefore be figured $^{5}_{3}$, the highest number being placed uppermost. In the first inversion (No. 15), from E to C is 6, and from E to G is 3; the first inversion will therefore be figured $^{6}_{3}$, or more commonly 6, as it is understood that the 6 includes a 3. In the second inversion (No. 16) from G to E is 6, and from G to C is 4; the second inversion will therefore be figured $^{6}_{4}$. Common chords in their original position, however, are not figured, except when they follow a second inversion on the same bass note or its octave (No. 17). Here it will be seen that the first chord being in the root position is not figured, but that the second last chord, being also in root position, is figured, because it is preceded by a $^{6}_{4}$ on the lower octave of the same bass note.



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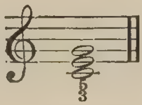

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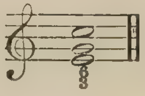

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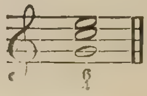

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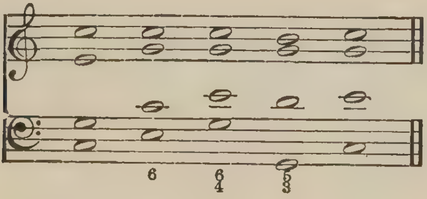

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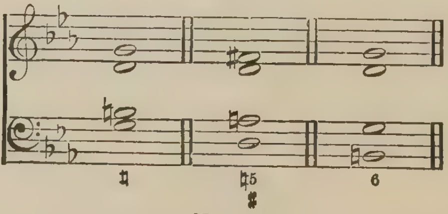
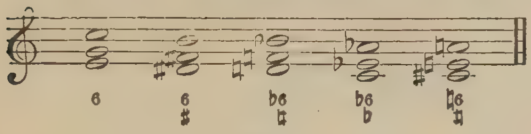


No. 18.

When it is required to alter a note from the signature, an accidental is used, and placed before the figure thus, ♮ 5. When an accidental appears by itself without a figure, it always refers to the third of a chord (No. 18). Sometimes, for the accidental sharpening of a note, a short line is drawn through the top of a figure, thus, 6̸.

Here are several chords of the sixth with accidentals (No. 19).

When a series of several first inversions follows in succession, it is always advisable to keep the *root* of the chord, that is, the sixth from the bass note, uppermost (No. 20).



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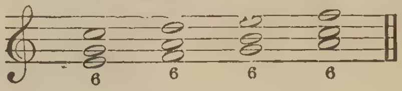
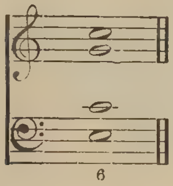


No. 20.

If the fifth of the chord, that is, the third from the bass note, were placed uppermost, a succession of fifths would ensue, which would be very bad (No. 21). When the harmony is in four parts, the best note to double would be the root in all major chords (No. 22). It may not, however, always be possible to do this without involving error in the harmony; the next best note to double would therefore be the fifth from the root (No. 23). By changing alternately from the root to the fifth of a chord, we are enabled to harmonise a succession of sixths in four parts both correctly and agreeably (No. 25); had we always doubled the root, consecutive octaves and fifths would have resulted (No. 24).



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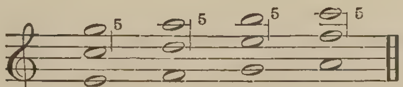

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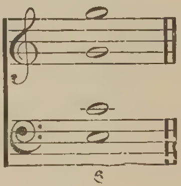
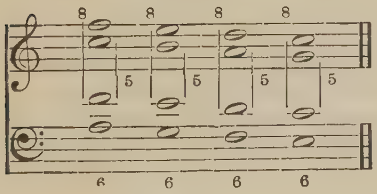


No. 23.

Here (No. 24) we see consecutive octaves between the tenor and treble, and consecutive fifths between tenor and alto, caused by doubling the root in every chord. In our next example we see how these can be avoided by alternately doubling the root and the fifth of the chord (No. 25). In the first chord we have doubled the fifth of the root; in the second chord we have doubled the root itself; in the third chord we have doubled the fifth; and in the fourth chord we have doubled the root, thus preventing all error. Every triad in the minor scale can also be taken in the first inversion; but the first inversion of the mediant, which has the dominant for its bass note, is not so frequently used as the others, owing to the diminished fourth, which occurs between the fifth and the root when the root is placed uppermost (No. 26). On this account the fifth is generally omitted, and the chord appears only with the third and the root, thus (No. 27), either of which may be doubled. In No. 28 are shown the triads of the minor scale in the first inversion.



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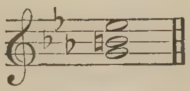

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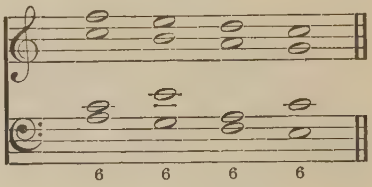

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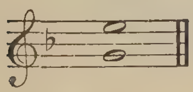

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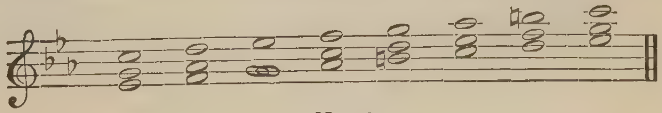
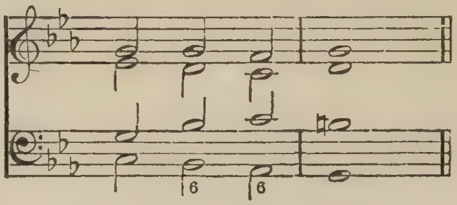


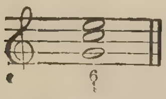
No. 28.

When the bass descends by degrees from the key-note to the minor sixth of the scale, a first inversion can be taken on the minor seventh of the key. This would seem to destroy the leading note by giving the dominant a minor third; but as the bass is coming from, not going to, the upper tonic, it is of no consequence, particularly as the resolution is on the dominant with the major third. This progression goes under the name of the Phrygian Cadence.

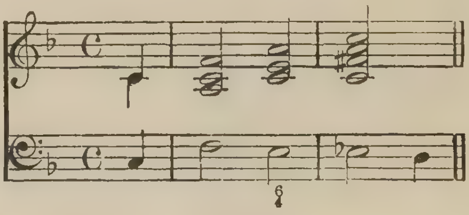


## SECOND INVERSION OF COMMON CHORDS.

The second inversion of a chord has the fifth for its bass note, the root and the third of the chord appearing in the upper parts. The root becomes the fourth to the bass part, and the third becomes the sixth. The figuring will therefore be $^6_4$ (No. 29). This inversion is principally used on the three primary chords of the tonic, dominant, and subdominant.

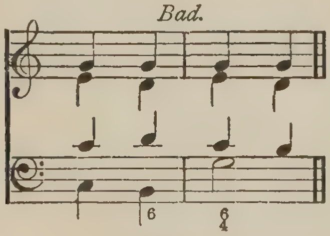


No. 29.

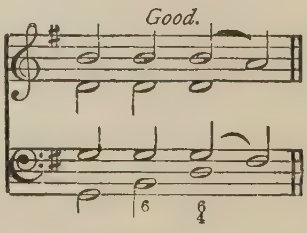


No 30.

Sometimes it is used on other chords than these; but it will be found when this occurs, that it is generally either in the course of a sequence, or when a modulation is made, causing the other chord to become one of the primary triads of the new key. There are, however, some exceptional uses of the $^6_4$; one very rare case will be found in the March from "Athalie," by Mendelssohn, where the $^6_4$ chord occurs on the chord of the mediant (No. 30).



No. 31.

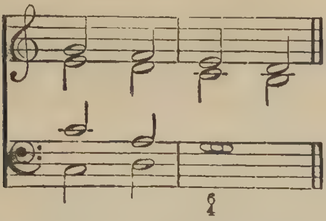


No. 32.

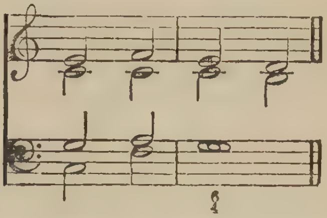
The bass should not approach a second inversion by leap from the inversion of a chord having a different root; but it would be quite right to leap from an inversion of the same chord. Thus, example (No. 31) is wrong; while the succeeding example (No. 32) is correct.

The bass may approach a second inversion either by step or leap from the root of another chord. The following examples are both right :—

By leap from root.

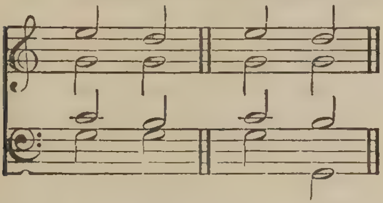


Or by step from root, thus :—

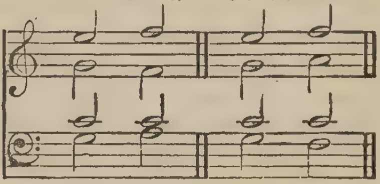


A second inversion, on being quitted, must be followed either by a chord upon the same bass note or its octave, or upon the bass note next above or below it.

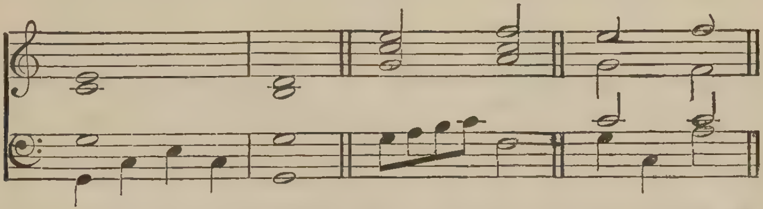
On the same note and Octave.



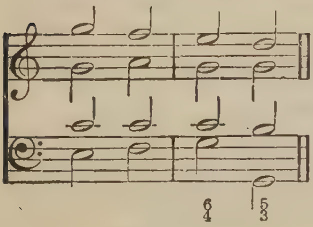
On note above. On note below.



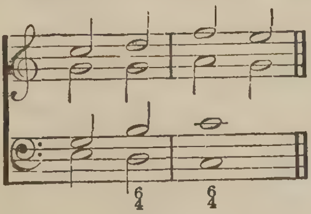
So long as the same harmony continues, the bass of a second inversion may move to another note of the chord, or may have a succession of passing notes ; but when the harmony changes to another chord, the bass must come back to the note that had the second inversion, or to the note next above or below it, that is, to the resolution it would have taken had there been no digression. Thus :—



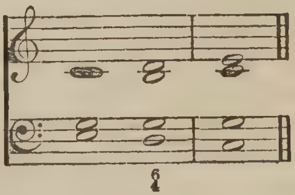
Second inversions should not be used too often ; and when they are followed by a chord on the same bass note or its octave, they should always be at a more strongly accented part of the bar than the chord which follows : the 6 should then proceed to 5, and the 4 should proceed to 3, the bass note being doubled. This is always the best note to double in a $\frac{6}{4}$ chord (No. 33)



No. 33.



No. 34.



No. 35.

The progression here shown gives a special sweetness to the imperfect cadence or half close. It is sometimes called the Feminine Cadence.

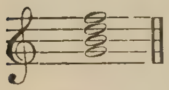
There is only one case where two second inversions may follow each other, and that is, when the second inversion of the dominant chord—the supertonic being the bass note—is followed by the second inversion of the chord of the subdominant, having the tonic for its bass (No. 34).

When a second inversion is followed by a chord on the next note, it may be either at a weaker or stronger part of the bar. The dominant chord when taken in the second inversion is never resolved on a $^{5}_{3}$, but is used as a passing $^{6}_{4}$ (No. 35).

## DOMINANT SEVENTH.

By adding a third to any triad, we get a chord of the seventh, the interval being a seventh from the root or lowest note; but of all the chords of the seventh, none is so familiar to the ear, or so important, as the chord of the seventh on the dominant. It is formed by adding a minor third to the dominant triad; and as this interval forms a minor seventh from its root, it must be classed amongst the discords, although the effect is so beautiful, that some can hardly bring themselves to believe it is a discord (No. 36).

The importance of it to the key in which it occurs is invaluable. It is truly the dominant seventh, because it rules or dominates the key: when the dominant appears with this seventh added, there can be no doubt about the key—it can only belong to one key. Without the seventh, the mere triad may belong to various keys. The triad (No. 37) may be either the tonic of the key of G, or it may be the dominant of the key of C. It may be also the subdominant of the key of D; but whenever the minor seventh is added, it can only belong to one key, and that the key of C (No. 38). It could not belong to the key of G, which is the first sharp key, because the chord has got F natural, and the key of G requires F sharp; and it could belong to no other of the sharp keys, because they all have F sharp. On the other hand, it could not belong to the key of F, which is the first flat key, because the chord has got B natural, and the key of F requires B flat. To none of the other flat keys could it belong, because they have all got B flat. Therefore it well deserves the name of dominant seventh, because it so thoroughly decides the key.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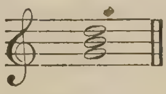
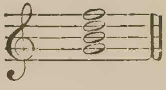

No. 37.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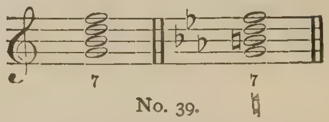
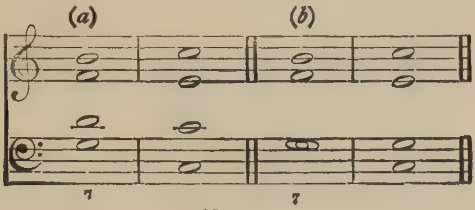


No. 39.

The intervals of this chord, counted from the root, are major third, perfect fifth, and minor seventh. Although all other chords of the seventh are built up in a similar way by thirds, yet the quality of those sevenths differs so completely from that of the dominant seventh, that it is not possible to confuse them. Whether the key be major or minor, the dominant seventh always has the same notes: it must always have a major third; and in the minor key this interval will require an accidental (No. 39). It is usually figured 7, and in the minor key $^{7}_{\natural}$, or $^{7}_{\sharp}$, as the signature may require. The fifth is not usually figured, unless it requires an accidental. Although there is no harshness in the dominant seventh, yet, as in the case of all discords, the ear feels that it requires something to follow it. By itself it has an unfinished effect, and requires a resolution, that is, to proceed or be resolved on another chord. This chord which follows, and which satisfies the ear, is called *the resolution of the discord*. The principal resolution of the dominant seventh is the chord of the tonic. The two notes of the dominant chord, the third and the seventh, which decide the key, have always fixed progressions. The third must ascend one degree to the octave of the tonic chord, and the seventh must descend one degree to the third of the tonic chord. In the major key the seventh will descend half a tone, and in the minor key it will descend a whole tone. The fifth may either ascend or descend (No. 40); but it is better to descend, for by ascending it would double the third of the next chord, whereas by descending it would double the root, which is preferable.

In four-part harmony, when all the notes are in the dominant chord, the chord of resolution must have the fifth omitted, otherwise consecutive fifths would occur; but if the full chord is wanted in the resolution, then the fifth must be left out in the dominant chord, as in No. 40 (*b*). It is clear that neither the seventh nor the third can be doubled; for, as each of these intervals has a fixed progression, consecutive octaves would be brought about. The dominant seventh,



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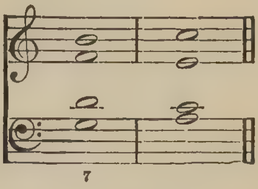
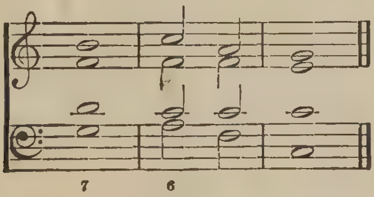


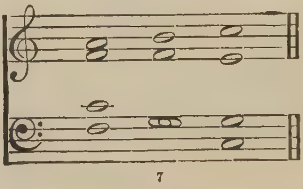
No. 41.

instead of being resolved on the chord of the tonic, may be resolved on the chord of the submediant. This resolution of the dominant has been shown before as the interrupted cadence: but it will be noticed that the progressions of the third and seventh are the same as when resolved upon the tonic chord. The seventh falls one degree to the fifth of the new chord, and the third rises to the third of the new chord (No. 41). The third of the submediant chord is doubled to avoid consecutive fifths, which would occur had D of the dominant risen to E of the submediant.

There is another resolution of the dominant seventh chord, which is sometimes used, although more rarely, that is, when it is resolved on the first inversion of the subdominant (No. 42).



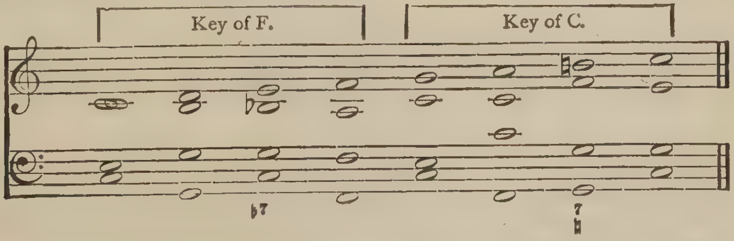
No. 42.



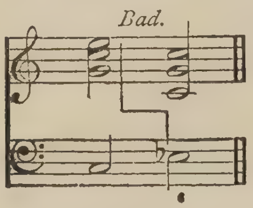
No. 43.

The discord here holds on, and becomes the root of the next chord, finally resolving on the third of the tonic. It is also a valuable connecting link between the subdominant and dominant chords; and in the last three chords of the ascending scale, it makes the progression much more smooth and pleasant. It also gives more definiteness to the perfect cadence (No. 43).

If the first tetrachord of the scale of C be taken as the top tetrachord of key of F, a pleasant modulation can be made to that key, by the use of the dominant seventh chord, the second tetrachord modulating back to key of C, thus—



It will be seen that the B flat added to the chord of C makes it a dominant chord, modulating to the key of F, and that the B natural proceeding to the B flat in the same part, prevents what is called *false relation*. This error takes place when, in two successive chords, one part has a natural note, and another part has the same note flattened or sharpened, the effect being worst between triads, and the fault being generally condoned when brought about by passing notes (see page 168), or dominant discords. The following example shows false relation (No. 44). If this note E had been altered to E flat in the same part, there would have been no false relation (No. 45).



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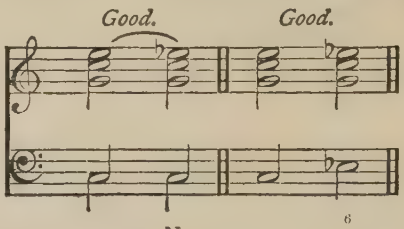
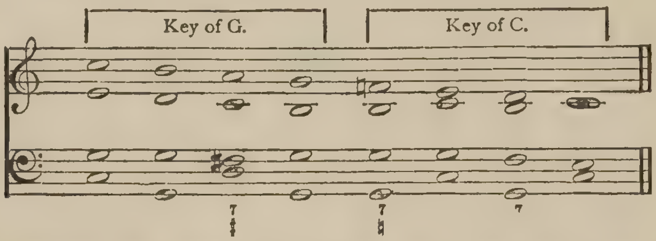


No. 45.

This is considered the simplest method of avoiding the error.

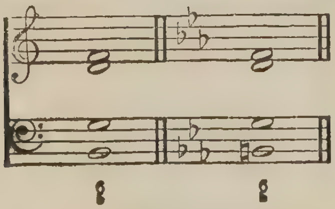
In the descending scale, if we consider the first tetrachord as belonging to the scale of G, by using the dominant seventh on the chord of D, we can get a pleasant modulation to the key of G, the F natural in the second tetrachord, remaining to be the dominant seventh of the chord of G, thus bringing us back again to the key of C—



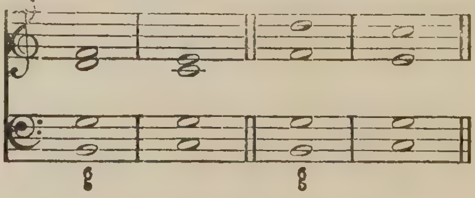
Although the F natural here occurs in a different part from the F sharp, there is no false relation, because a chord intervenes, and the altered note forms part of a dominant discord.

## INVERSIONS OF THE DOMINANT SEVENTH.

As the dominant seventh has three notes besides the root, it has therefore three inversions. The first inversion has the third in the bass, the root appearing in an upper part. The root will then be a sixth from the bass note, and the fifth will be a third. The seventh will also be a fifth above the bass, and the figuring of the chord will then be $\substack{6\\5\\3}$. The figure 3 is usually omitted, except when it requires an accidental (No. 46). This is resolved generally on the root



No. 46.



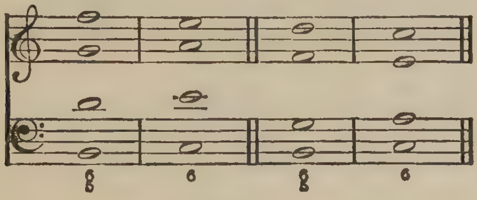
No. 47.

of the tonic chord, the third and seventh following the same rules as when in root position, namely, the third ascending one degree, and the seventh descending one degree (No. 47).

It may also resolve upon the submediant, but in this case it must resolve upon the first inversion, because the leading note in the bass must rise. The fifth may either ascend or descend, but if it be above the root, it must fall, in order to avoid consecutive fifths (No. 48).

There is another resolution which it may have, namely, that upon the second inversion of the subdominant, but it is so very seldom found that it need only be mentioned. It will be seen now that the diminished triad on the leading note is simply the dominant seventh without the root.

The second inversion of the dominant seventh has the fifth in the bass. The root and third will now become the fourth and sixth to the bass, while the seventh will become the third. The figuring will therefore be $\begin{smallmatrix}6\\4\\3\end{smallmatrix}$, or more usually $\begin{smallmatrix}4\\3\end{smallmatrix}$, except in the minor key, when the full figuring is used; because the leading note bears an accidental (No. 49).



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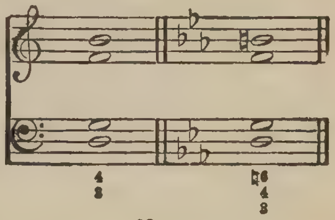
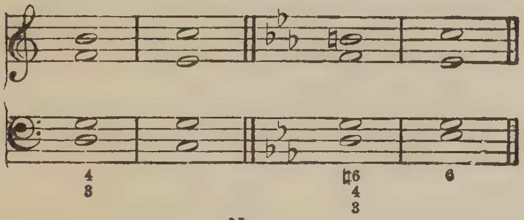


No. 49.

This second inversion is chiefly resolved on the tonic chord, the bass either falling one degree to the root, or rising one degree to the third of the tonic (No. 50).

An important exception to the rule that the seventh must descend one degree, occurs when the dominant seventh is in this inversion. The exception may be stated thus: when in the second inversion of the dominant seventh, the bass proceeds to the first inversion of the tonic, the seventh may *ascend to the fifth of the tonic,* instead of, as usual, descending to the third of the tonic (No. 51).



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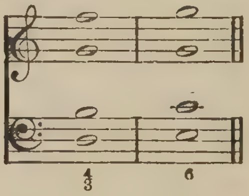
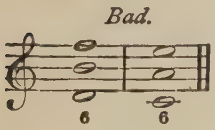


No. 51.

This resolution is very frequently used, but it is always better when the rising seventh is at the distance of an actual seventh from the root, as in the example just given.

The progression from a diminished fifth to a perfect fifth is not good when both parts descend a second (No. 52).



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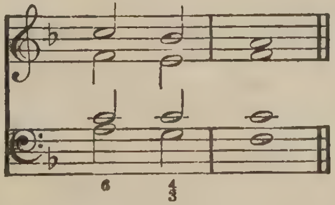

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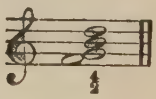


No. 54.

In this second inversion the root is often omitted, the chord then becoming simply the first inversion of the diminished triad. Handel rarely, if ever, introduced the root into this chord.

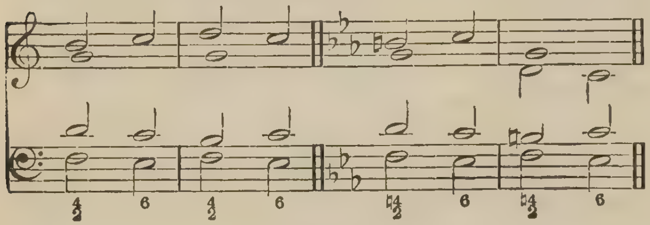
The second inversion of the dominant seventh may also be resolved on the first inversion of the submediant, or on the second inversion of the subdominant. These resolutions, however are very rare.

In the example given of the seventh ascending, there seems to be the appearance of two consecutive fifths between the tenor and treble; but one of them is a diminished fifth, and the other a perfect fifth, which is quite allowable, the objection being only to two *perfect* fifths. The example (No. 53), would also be perfectly correct.

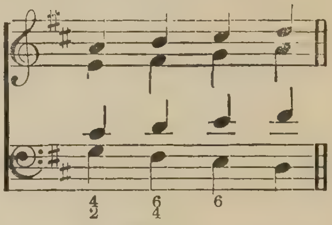
The third and last inversion of the dominant seventh has the seventh in the bass. The root, third, and fifth of the chord, now become the second, fourth, and sixth above the bass note. The figuring of the chord would therefore be $\substack{6\\4\\2}$, usually $\substack{4\\2}$, and sometimes only 2, the sixth being figured only when an accidental is required (No. 54).

The resolution of this inversion is on the first inversion of the tonic chord (No. 55).

In very rare cases it will be found resolving on the second inversion of the submediant, and



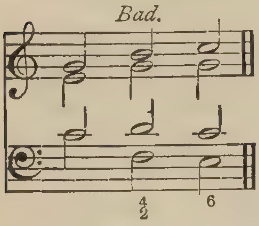
No. 55.



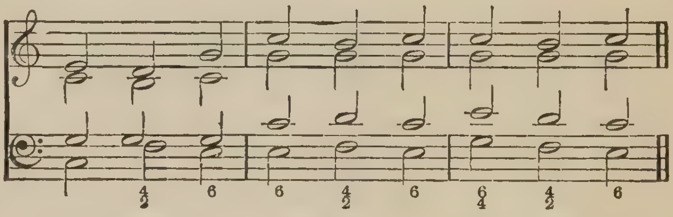
No. 56.

then the upper parts always move by step of a second in contrary motion, as in the above example from Mendelssohn's "St. Paul" (No. 56).

In this inversion the root is almost invariably present, as it would otherwise give the second inversion of the diminished triad on the leading note. This last inversion of the dominant seventh is a favourite with the great Masters, as it always produces an effect of grandeur or dignity. Their writings abound with examples of its use. The opening chord in the First Symphony of Beethoven is this inversion of the dominant seventh. This inversion should not be approached by leap downwards (No. 57). But it can be approached by leap upward or by step of a second downward or upward (No. 58).

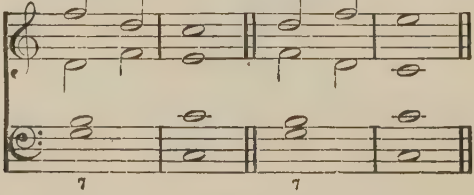


No. 57.



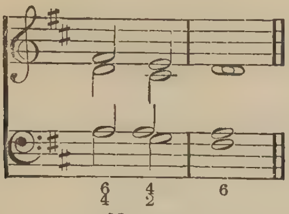
No. 58.

One important point in connection with the dominant seventh, and with all other fundamental discords, is, that they need not be resolved in the part where they were originally sounded, but that they may be *transferred from one part of the harmony to another*, provided they are properly resolved in the part where they are last heard (No. 59).



No. 59.

In the first example the seventh is transferred from the treble to the alto, and resolved in that part. In the second example, the seventh is changed from the alto to the treble, and resolved in that part. One case where an upper part may proceed in fourths with the bass is, when the second fourth is part of the last inversion of the dominant seventh (No. 60).



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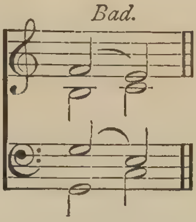
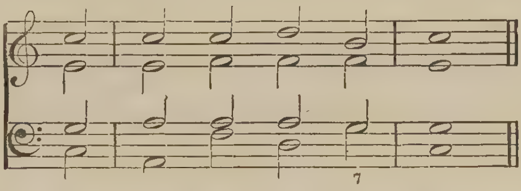


No. 61.

In this last example the fourths occur between the alto and the bass. The same note that resolves the seventh should not be approached by similar motion in any other part (No. 61).

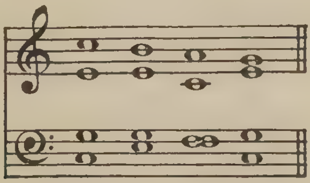
## SECONDARY TRIADS.

It has been already stated that the chords on the supertonic, submediant, and mediant of the major key, are called secondary triads, and are all minor. Too many secondary triads should not be used consecutively after each other in the major key, owing to the uncertainty they impart to the key, but should always be interspersed with primary triads. Each secondary triad comes most effectively after that primary triad of which it is the relative minor—

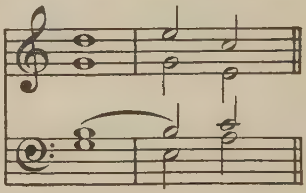


Here the chord of C is followed by its relative minor A, and the chord of F is followed by its relative minor D. The reverse of that would rarely have a good effect: that is to say, it is not so good to allow a relative major to follow its relative minor.

The most troublesome of all the secondary chords to use well is the mediant; and some writers are inclined to class it as a dissonant triad because of its harsh effect. It may be, however, used with good effect to harmonise the leading note in the descending major scale (No. 62).



No. 62.



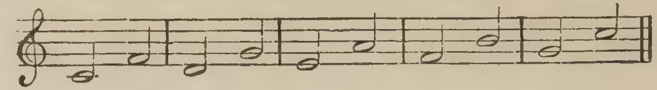
No. 63.

It should, however, generally be used with caution. It is sometimes good to omit the fifth and double the third: it then becomes an ambiguous chord, the fifth not being there to define it.

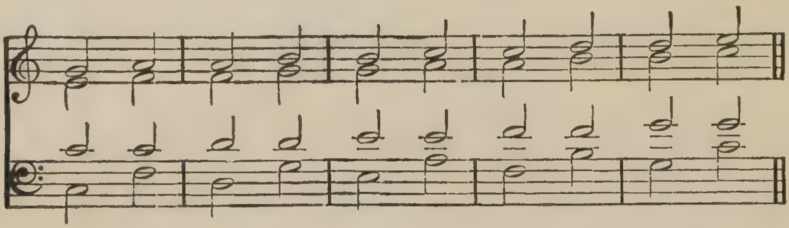
It may also be used by making the fifth move by step away from the tonic, as in the previous example, or by step to the tonic. The fifth may also be prepared in the previous chord and then go to tonic (No. 63).

It can be used freely in a sequence.

A sequence is the repetition of any short passage of melody or harmony on other notes of the scale, each part moving by the same degrees as the original passage, thus—

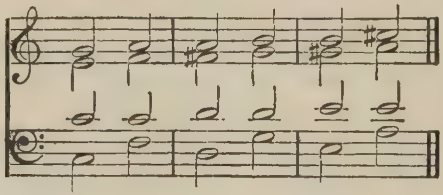


This is a melodic sequence, where the leap of a fourth from C to F is imitated in the second bar one note higher, from D to G, and in the third bar another note higher, and so on in the next two bars. The pattern set for a sequence may be imitated at any interval above or below. If we harmonise the above example, we shall find that all the notes in the second bar are one note higher than in the first; those in the third bar one note higher than in the second; and the same with the remaining bars—



This sequence is called a *tonal* sequence, because it remains in the same key; and although in the imitation the name of the interval remains the same, the quality often differs. Thus the first chord in bar one is major, while the first chord in bar two is minor; the first chord in bar three is minor, and the first chord in bar four is major. Thus they differ in almost every bar.

When the imitations are exactly the same in quality as well as name, the sequence is then said to be a *real* sequence—

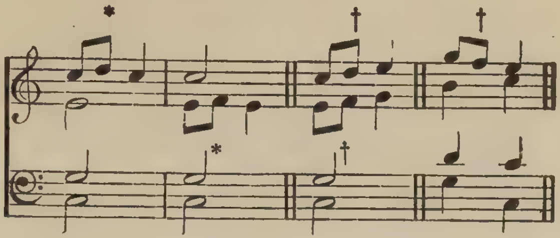


This is a real sequence, because every succeeding interval has the same quality of interval as the one that precedes it. Consequently every repetition of the original phrase will be in a different key from the preceding. An ascending sequence of three or more repetitions is sometimes called a *rosalia*.

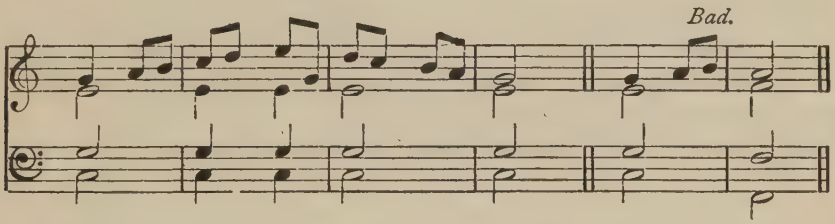
Many chords and progressions of melody are allowed in the course of a sequence which would be totally inadmissible outside of a sequence, and in one of the repetitions, even the leading note may be doubled.

## PASSING NOTES.

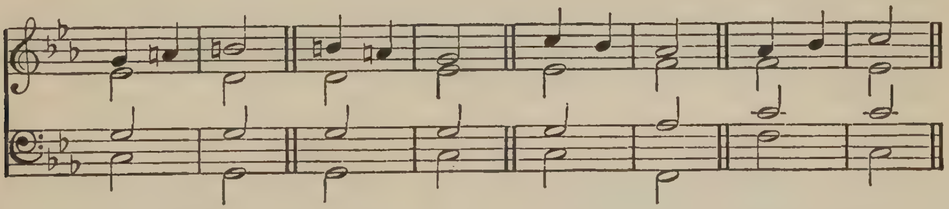
Passing notes are notes which do not belong to the chords, and which are not necessary to the harmony. They are used for embellishment or ornamentation, giving smoothness and grace to a passage which, without them, would largely consist of leaps. Passing notes are used in one or more parts, and are resolved either upon a note of the chord from which they proceed, or upon a note of another chord. When a passing note returns to the same note from which it starts, it is sometimes called an auxiliary note (* auxiliary ; † passing)—



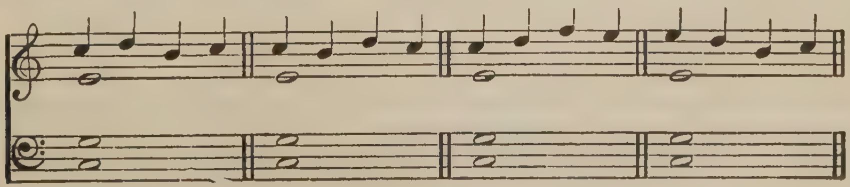
A passing note may be *approached* either by step of a second or by leap, but must be *left* by step of a second, and may be used either at the accented or the unaccented part of the bar. If the note to which the passing discord goes be also foreign to the harmony, this second passing note must not return, but must proceed onwards in the same direction until a harmony note is reached—



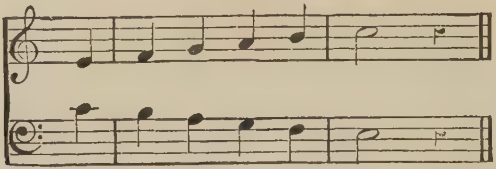
In order to escape the interval of the augmented second, which occurs between the sixth and seventh degrees of the scale, it is customary in the minor key to use for passing notes the melodic form of the minor scale, with the major sixth ascending, and the minor seventh descending. Thus in going from the dominant to the leading note, or from the leading note to the dominant, we should use the major sixth of the key as a passing note ; or if we go from the tonic to the submediant, or from the submediant to the tonic, we should use the minor seventh of the key as a passing note—



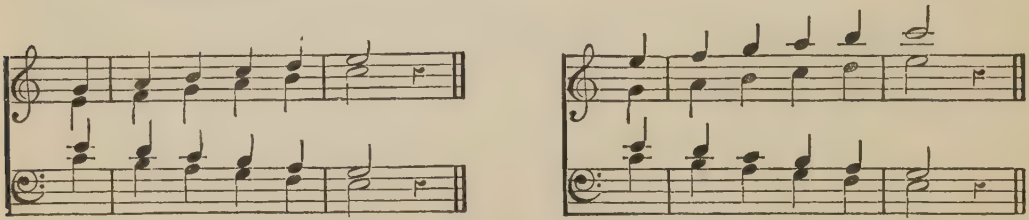
There is one case where a passing note may be quitted by leap of a third instead of by step ; but if this leap be taken, it must return to the harmony note between the two. Passing notes used in this manner are called *changing notes*—



Two parts may proceed by step in contrary motion till a harmony note is reached thus—

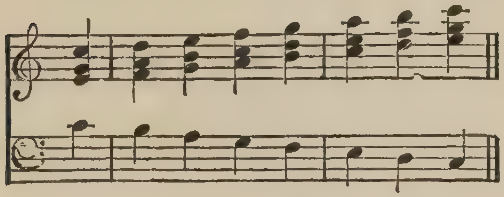


Either or both of these parts going in contrary motion may have another part proceeding in thirds or sixths with it—

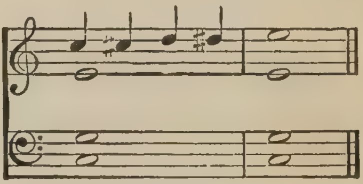


A succession of chords of the sixth may be used against single notes proceeding in a contrary direction, either ascending or descending (No. 64).

Chromatic notes as well as diatonic can be used as passing notes; but wherever a chromatic note has been introduced, it must proceed by semitones till a harmony note is reached (No. 65).

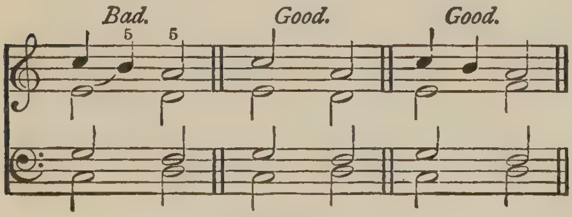


No. 64.

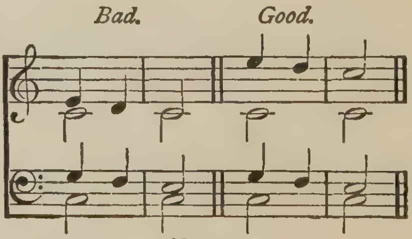


No. 65.

A passing note must not be allowed to produce consecutive octaves or fifths with any other part. When this occurs either the passing note must be omitted, or the note of the other part which makes octave or fifth must be altered (No. 66).



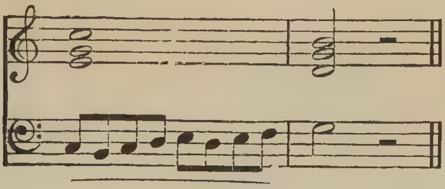
No. 66.



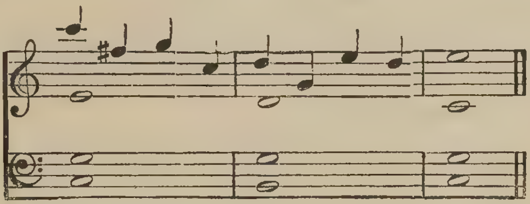
No. 67.

It is not considered good for a passing note to proceed to a unison by oblique motion; but it is quite allowable for it to go to the octave (No. 67).

Passing notes in the upper part are not usually figured. When passing notes are in the bass part, a line of continuation is drawn extending from the first harmony note till a change of chord occurs, as an indication that the same harmony must continue during the whole length of the line—



If a passing note, taken by leap, be resolved *on the note above*, it must be at the interval of a semitone, unless the note on which it resolves be the third of a chord, in which case it may be at the interval either of a tone or a semitone; but if taken by leap, and resolved *on the note below*, it may either be at the interval of a tone or a semitone, according to its position in the scale—

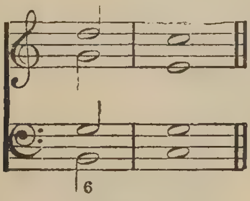


## SUSPENSIONS.

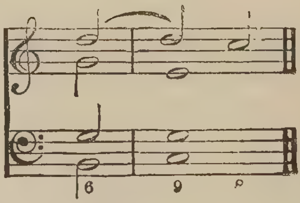
We have seen discords used on the unaccented or the accented parts of the bar in the form of passing notes: we shall now see them used on the strong or accented parts of the bar in the form of what are called suspensions.

A suspension is the holding on of a note which has been previously sounded in another chord over the following chord, of which it forms no portion; and the suspended note must proceed to a note of the chord over which it is suspended. The following paragraph will make this clear.

In No. 1, the treble note D proceeds at once to C in the next chord, along with the other notes; but if the D is prolonged into the next chord, and falls into the C after the other notes have been sounded, we have then a suspension, thus (No. 2). Here the treble D, instead of moving at the same time with the other notes, seems to have forgotten to come down to C,

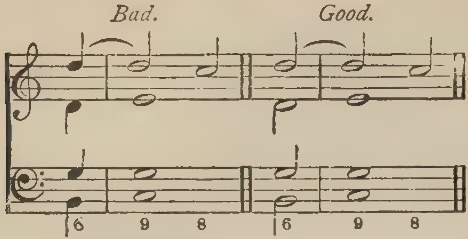


No. 1.

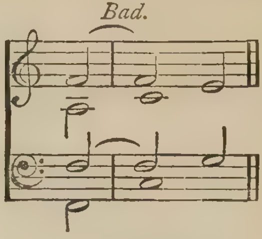


No. 2.

and only arrives after all the other notes have gone to their places. It is thus an intruder into the chord, and it sounds discordant by being prolonged. The ear expects the note of the chord that is kept back, and is not satisfied till it is heard. The sounding of the note in the first chord is called the *preparation of the discord;* the holding of the note over the chord to which it does not belong is the suspension itself; and the progression of it to the note of the chord to which it belongs is called the *resolution of the discord.* The notes that may be suspended as discords are the ninth and fourth of any root, that is, the octave of a chord kept back by a ninth, and the third of a chord kept back by a fourth, along with their inversions; also the dissonant fifth of the third and seventh degrees of the major and minor scale. The suspension should always occur on the stronger accent, and the resolution on the weaker; and the note of preparation should not be shorter in duration than the note of suspension (No. 3). The suspended note should never be doubled (No. 4). The note of resolution should not be heard at the same time with the suspension, except the ninth when the root is in the bass. The ninth must never be written as a second to the bass.



No. 3.



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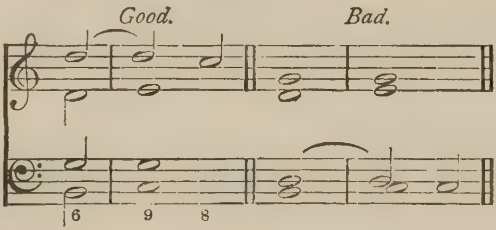
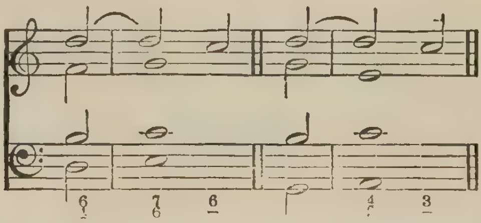
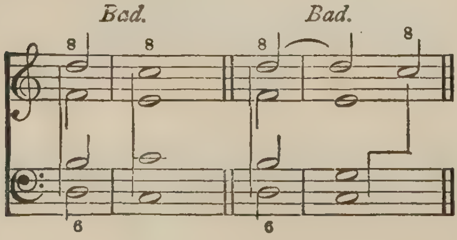
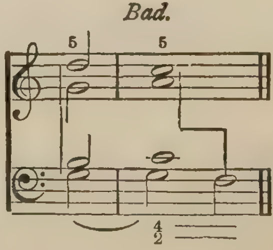


If the octave to the note of resolution be approached by step, it may sometimes be heard in an upper part along with the suspension, but at best it is harsh and undesirable, and should only be used on rare occasions.

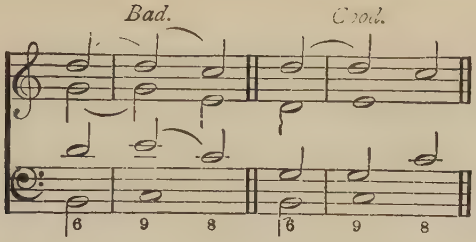


A progression that is bad without a suspension, is equally bad when the suspension is present; therefore consecutive octaves and fifths are bad, even although the second octave or fifth be delayed by a suspension.

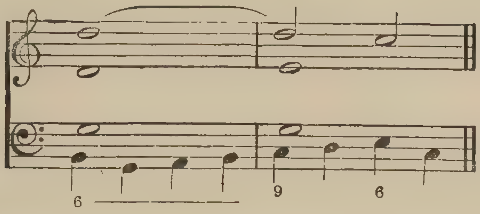




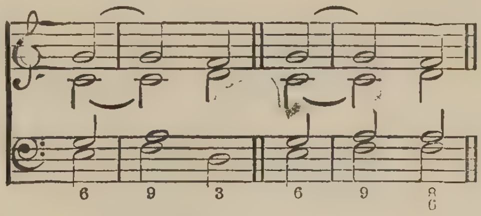
The note of resolution should never be approached in another part by similar motion to the progression of the discord but it is quite good to approach it by contrary motion.



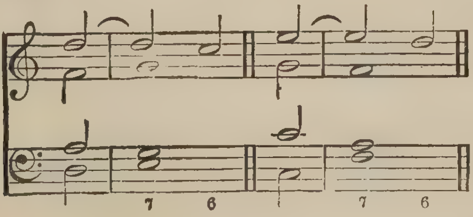
When the suspension is over a moving bass, it may be resolved upon the third of a chord instead of the root, and is figured 9 6 showing that the suspension is resolved on the first inversion.



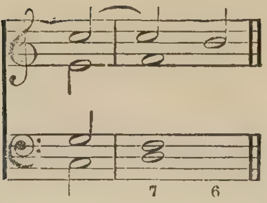
One important exception to the rule that suspensions should always be resolved upon the same chord is, when a discord that cannot be considered anything else than a suspension is resolved upon a chord, the root of which is a third below the note over which the ninth is suspended, or on one of its inversions.



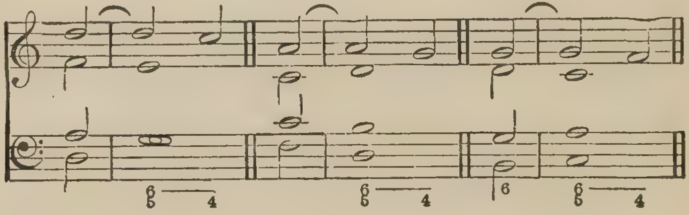
The first inversion of the suspended ninth would have the third of the chord over which it is suspended in the bass: thus the ninth would become a seventh to the bass note, and would be resolved on a sixth, being the first inversion of the chord.



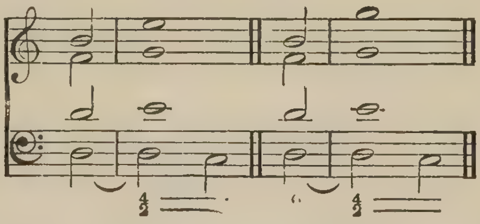
The suspended ninth may be taken over the first inversion of dissonant triads, although it cannot be taken over them in their root position.



The suspended ninth may be taken over a chord in the second inversion, but only over such chords as may be used in the second inversion, namely, tonic, dominant, and subdominant. It is figured $\begin{smallmatrix}6 & - \\ 5 & 4\end{smallmatrix}$.

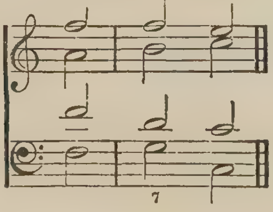


When the ninth is put in the bass and resolved on the root, it is called the last inversion. The third of the chord is now the second to the bass, and the fifth is now the fourth, either of which may be doubled; and when the discord is resolved in the bass, the fourth and second then become five and three.

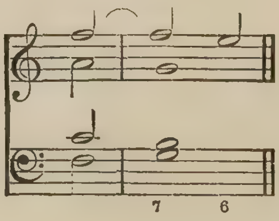


Care must be taken not to confound the figuring of suspended discords with that of fundamental discords, as they are very similar. For instance, a dominant seventh discord is figured 7, so is the first inversion of the suspended ninth: but the first is resolved upon another chord, while the second is resolved upon the same chord. Whenever the figure 7 is followed by 6 on the same bass note, it is always a suspension; and it must not be accompanied by the fifth, as that does not belong to the chord over which the seventh is suspended.

FUNDAMENTAL SEVENTH.

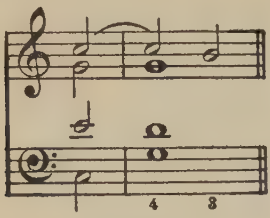


SUSPENSION.



Of these two examples the first is a fundamental chord of G resolving on the chord of C; the second example is the suspension of F held over the first inversion of E.

As the ninth keeps back the octave or eighth, so the fourth keeps back the third of a chord No. 5). Here the chord of C is going to the chord of G; but the third of the chord G is kept back, by the C being prolonged into that chord.



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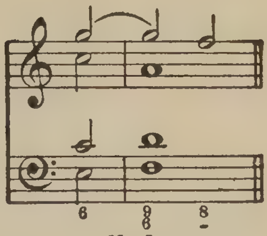
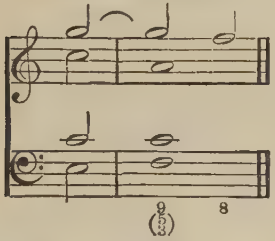


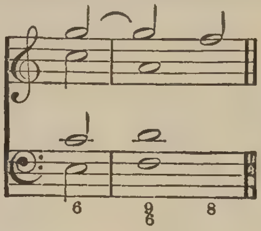
No.6.

The suspended fourth may also be taken over a chord in its first inversion, but the bass must be approached by step of a second. The fourth is then the ninth to the bass, and resolves upon the eighth (No. 6). This inversion of the suspended fourth must not be confounded with the suspended ninth, as the figuring is very similar, with this difference that, in the case of the suspended fourth, the figuring 9 8 is accompanied by 6, whereas the suspended ninth is accompanied by $\frac{5}{3}$ implied. Thus :—

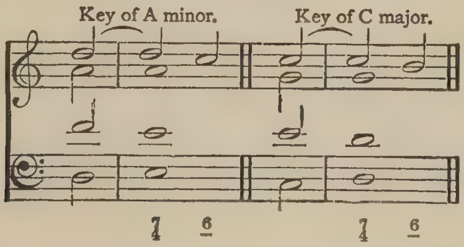
Suspended Ninth.



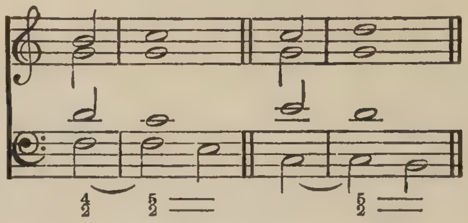
First Inversion of Suspended Fourth.



This suspension may be taken over the dissonant chords in their first inversion, although it cannot be taken over them in their root position. The second inversion of the suspended fourth has the fifth of the chord over which it is suspended, in the bass. The suspended fourth then becomes the seventh to the bass, and is resolved upon the sixth. Like all other second inversions, it is only admissible on the chords of the tonic, dominant, and subdominant.

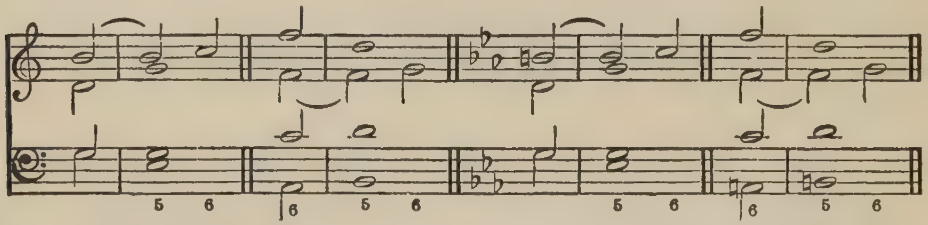


The figuring is apt to be confused with that of the first inversion of the suspended ninth; but in this case it is accompanied by the fourth from the bass note, while in the first inversion of the suspended ninth, it is accompanied with the third from the bass note. When the suspended fourth is placed in the bass, it is then said to be in the last inversion, and is resolved upon the third of the chord into which the discord is introduced, that is, upon the first inversion. The fifth and the root of the chord above the discord becomes the second and fifth; and when the discord is resolved upon a first inversion, of course these notes then become the third and sixth from the bass, thus .—

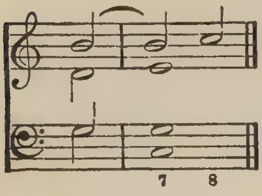


This suspension can be taken under any chord that bears a first inversion.

When suspensions resolve upwards, they are sometimes called *retardations*. These occur when the fifth above the triads on the third and the seventh of the key both in major and minor resolves upwards into the sixth, the resolution thus producing the first inversion of a chord.



The fifth above any other bass note may either go by step to the sixth or leap to any other note ; but above the third or seventh of the key it must resolve upon the sixth. A very common retardation is the seventh suspended into the eighth, that is, the root suspended by the note below it (No. 7).



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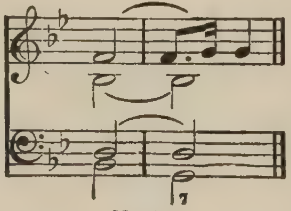

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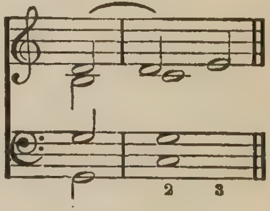
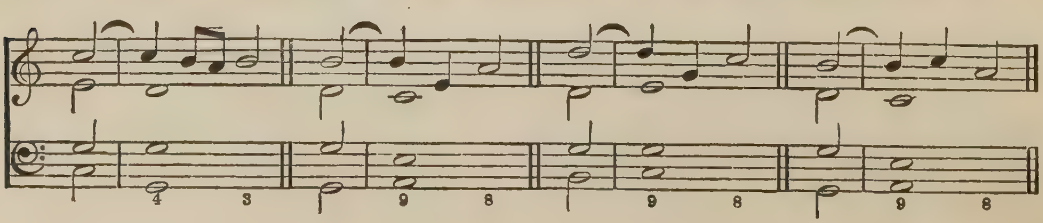


No. 9.

This usually occurs only on the tonic of the key, although Wagner in his " Meistersinger " has an example of the seventh from the submediant resolving upwards into the root (No. 8).

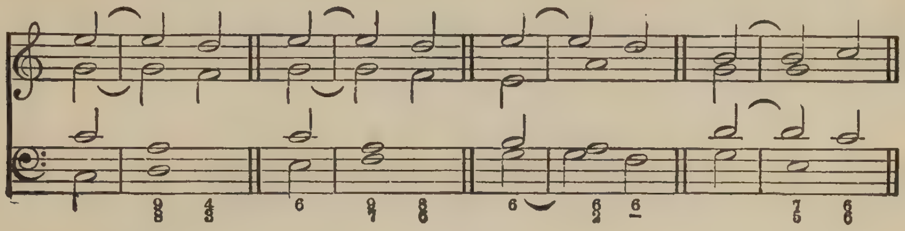
Sometimes the second will be found suspended into the third (No. 9).

Any suspension may have what is sometimes called an ornamental resolution, that is, it may either leap or proceed by step to a consonant note of the same chord, before it proceeds to its note of resolution. Passing notes may also be introduced as in the first of previous example.

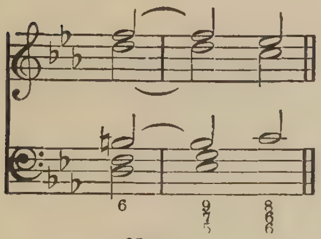


## DOUBLE SUSPENSIONS.

When two notes are suspended at the same time, the combination is called a double suspension. The ninth may suspend the octave of the root of a common chord at the same time that the fourth suspends the third; or any of the suspensions may be heard at the same time, provided they are prepared and resolved in the same manner as if they were used singly.



Here, in the first of this example, we see the ninth suspended into the eighth at the same time that the fourth is suspended into the third. Then we have the same suspensions in the first inversion. Next we see the ninth suspended into the eighth in treble, and the fourth suspended into the third in the bass. Lastly, we see the fifth on the mediant suspended into the sixth, while the ninth is suspended into the eighth in the tenor. The suspended fifth over the third of a key may be taken at the same time with the first inversion of a suspended fourth, and the first inversion of an inverted ninth (No. 10). This is called a triple suspension.



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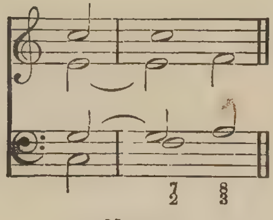

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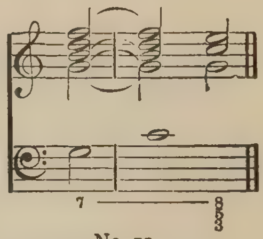
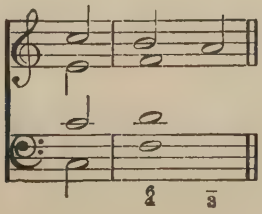


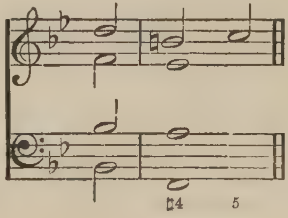
No. 12.

Sometimes whole chords are suspended over a bass note. This may be done whenever the root of the chord of resolution is a fourth above the root of the chord of preparation, but each part must not move more than a second (No. 11). This will often be found in a final cadence when the whole of the chord of the dominant is suspended over the tonic chord (No. 12).

This is sometimes figured $\begin{smallmatrix}7\\5\\4\\2\end{smallmatrix}$ but the better and more usual way is to draw a line of continuation, as in previous example.

What are called *appoggiaturas* are in reality simply passing notes on the accented part of the bar, and sometimes taken by leap. They keep back some note of a chord, and always occur

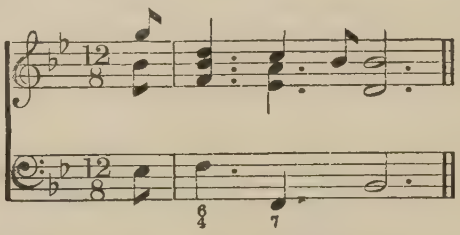




one degree above or below the note kept back. When they are taken above a note, they may be at the distance of either a tone or a semitone, according to the key on which they occur, but when used below a note, they should always be at the distance of a semitone from the note of resolution.

These appoggiaturas, like passing notes, do not make false relation.

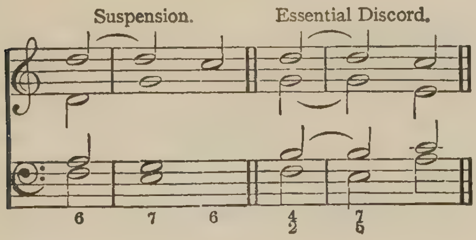
Sometimes a note instead of coming in after its time, as it does in suspensions, comes in before its time. When this occurs, it is called a note of *anticipation*. These notes of anticipation are the reverse of suspensions. They are generally heard in proceeding from the dominant to the tonic, when a note of the dominant chord goes to the tonic while the dominant chord remains, the resolution on the tonic chord coming in afterwards.



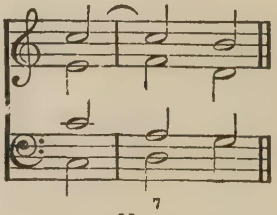
This is very usual in Handel's works. Here, in previous example, the note B♭ of the tonic chord is heard during the continuance of the dominant chord F, the resolution taking place a little later.

## ESSENTIAL DISCORDS.

We have seen that suspensions are entirely foreign to the harmony, and that they keep back some note of the chord of resolution. Essential discords, on the contrary, are themselves part of the harmony; and they differ from suspensions by being resolved, together with the chord of which they form an essential part, upon a chord having another root, whereas suspensions resolve upon the same chord as that over which they are held (No. 13).



No. 13.

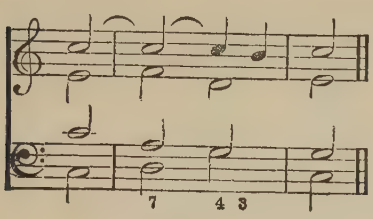


No. 14.

The suspension is here held over the chord of C; the essential discord belongs to the chord of the seventh on E, resolved on the chord of A, the fourth above. A seventh may be added to any triad, provided it is prepared in previous chord, and can be resolved on a chord the root of which is a fourth above the root of the discord (No. 14). Here the seventh C is added to the chord of D, F, A, prepared in the previous chord, and resolved upon the chord of G, which is a fourth above the chord of D, over which the discord is taken.

The resolution may even be delayed by suspending the C over the last chord before resolving on B the third of the chord, making a suspension of the fourth (No. 15).

The first inversion of a chord of the seventh may also be taken, *i.e.*, when it has the third in the bass. The seventh then becomes the fifth to the bass, and it requires the same resolution in whatever position it may appear (No. 16). Here the seventh of the chord is in the tenor, and the bass being a first inversion, rises one degree to the root of the next chord. The second inversion is not used.



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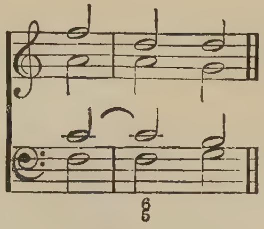
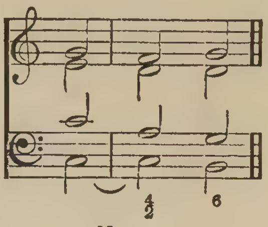


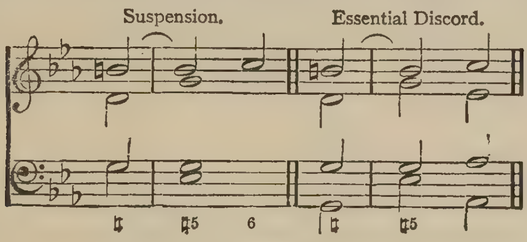
No. 16.



No. 17.

The last inversion has the seventh in the bass, which, descending one degree to the third of a chord, must resolve on a first inversion (No. 17). The powerful effect of the chord in this position is very marked.

The fifth on the third degree of the major and the minor key can be taken in the same manner. Instead of rising as a suspension to the sixth, the fifth as an essential discord rises to the third of a chord with another root (No. 18). This may also be inverted by placing the third in the bass, and though the bass rises only one degree, the root relationship is the same (No. 19).



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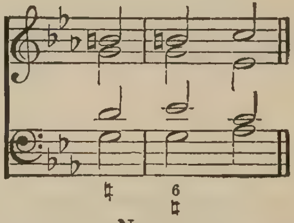
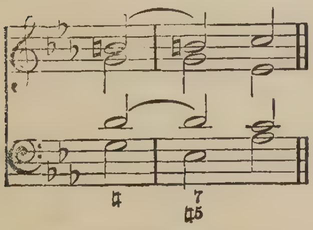


No. 19.

A seventh can be added to this chord on the mediant of major and minor keys, when the resolution of both is the same as when taken separately (No. 20).

In the inversion of the chord of the mediant, with or without the seventh, in a major key, the fifth (not being a discord), does not require preparation; only the seventh requires to be prepared (No. 21). Here the fifth of mediant B being now the third from the bass, and in no way a discord, is not prepared in the previous chord.

The diminished fifth on the supertonic of the minor key is taken only when accompanied by the seventh, and, like the seventh, it is resolved downwards (No. 22). In the inversion of this chord also, the seventh only requires to be prepared, the fifth not being a discord.



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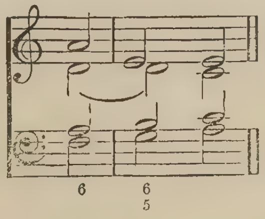

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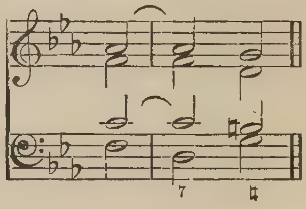
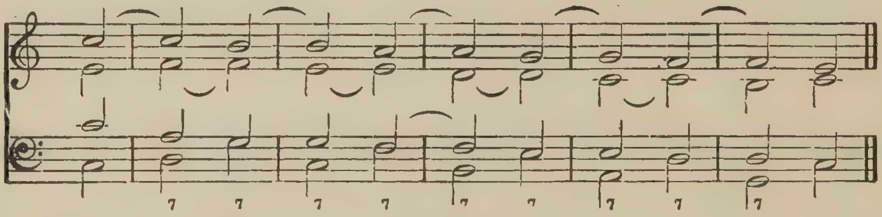


No. 22.

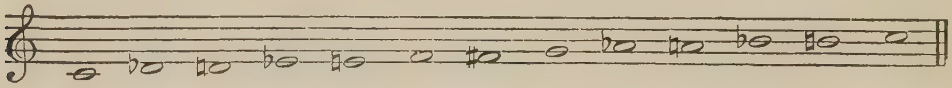
In modern composition all those essential discords are often taken without preparation. Even in the last century, the old law of preparation and progression was often set aside, so that now we may safely say that any essential discord can be taken without preparation; and the reason is that, as the science has advanced, all these essential discords can be shown to be part of the dominant chord, the seventh of which (as has already been shown) can be taken without preparation. This will be explained clearly further on. It must be remembered, however, that this preparation of these discords, and their resolution on another chord, the root of which is a fourth above their own, was the practice of the best masters; and it will be expedient for the student not to cast aside that practice entirely. Nothing could be finer than the effect of a succession of chords of the seventh prepared and resolved on each other, making a sequence which might be carried through the whole scale.



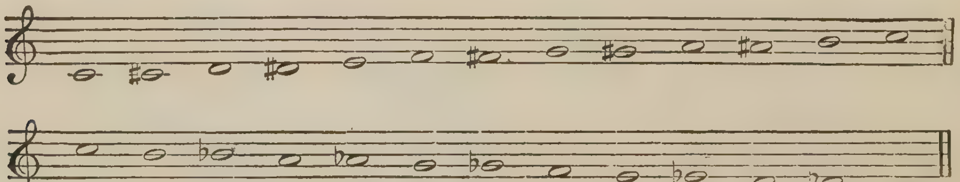
Here the seventh on D is resolved on the chord of G with a seventh, which in its turn is resolved upon C with its seventh, resolving upon F, to which a seventh has been added, resolving on B, and so forth, during all the sequence: the roots in every instance rising a fourth, or, what is the same thing, falling a fifth. Sevenths on any note of scale in the key, except the dominant, are called secondary sevenths, to distinguish them from dominant sevenths, which are termed fundamental sevenths.

## CHROMATIC CONCORDS.

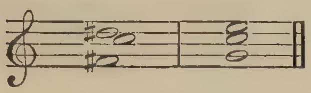
Chromatic chords are those which have notes not belonging to the signature of the key, and yet induce no modulation. What is called the harmonic chromatic scale contains twelve semitones, all of which can be used in the key without necessarily causing modulation. The following is the harmonic chromatic scale of C:—



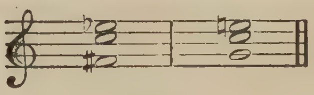
This scale, it will be seen, consists of all the notes contained in the major and minor scale of C, together with the minor second, minor seventh, and the sharp fourth. It is customary to write this scale in what is called the "melodic form," that is, with sharps ascending and flats descending, thus:—



Many of these notes, as written in the so-called "melodic form" of the chromatic scale, could not possibly belong to the key of C; but they are often employed by composers in order to save the use of accidentals which would be necessary had they used the "harmonic form." When so used, they are said to constitute expedient *false notation* that is to say, the corresponding note in the harmonic form is the true note which belongs to the chord. Thus No. 23 is often used instead of No. 24, the D sharp being false notation for E flat, and used to save



No. 23.

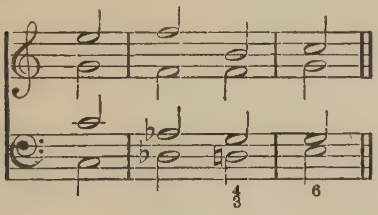


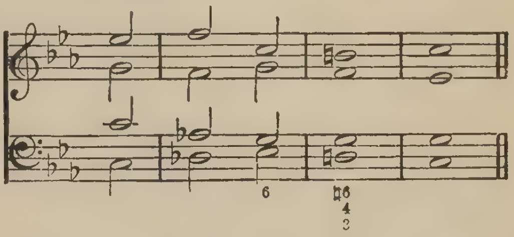
No. 24.

the additional accidental natural before the following E. In order to find the true chord, however, the D sharp must be read as E flat: this will be clearer when we come to deal with chromatic discords. A chromatic chord can easily be known by the harmony that precedes and follows it being undoubtedly in the same key.

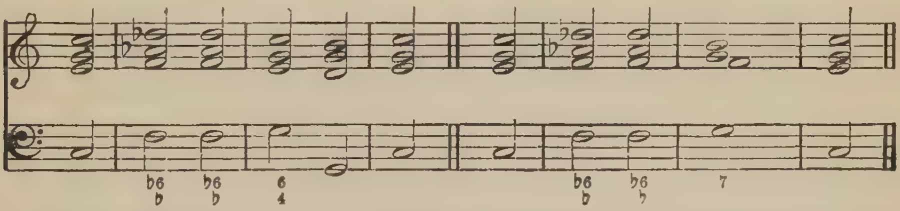
## CHROMATIC CHORD ON MINOR SECOND OF THE KEY.

In the key of C this would be the chord of D flat major; and although there is no restriction as to what chord in the key may follow this, it is generally followed either by the dominant seventh in root or inversion, or by some inversion of the tonic.





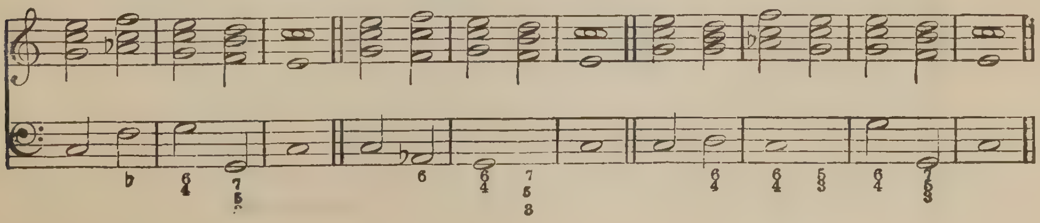
The first inversion of this chord is called the *Neapolitan sixth*. It is very frequently met with in this position. The best note to double in this inversion is either the bass note, which is the third from the root, or the sixth from the bass note, which is the root itself. This chord is generally followed by the second inversion of the tonic, or by the dominant seventh chord.



The second inversion of this chord is sometimes used, but only very rarely. A full close in which the Neapolitan sixth is used is sometimes called a pathetic cadence.

## CHROMATIC CHORD ON THE SUBDOMINANT.

This is merely the subdominant of the major key made minor. It can be used in both inversions, just as an ordinary subdominant—

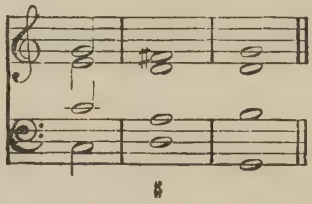


A familiar example of this chord occurs in the opening bars of the Overture to the "Midsummer Night's Dream," by Mendelssohn.

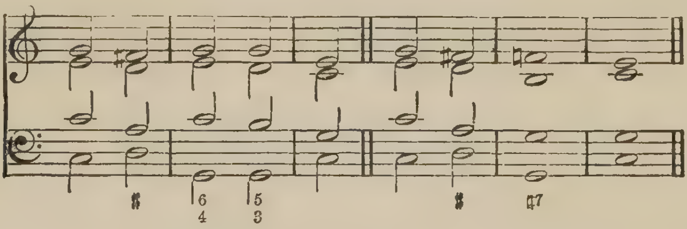
There are four chromatic concordant triads that can be used in the major scale, namely, the major chord on the supertonic, the major chord on the minor second of the key, the minor chord on the subdominant, and the major chord on the minor sixth of the key; these can all be used in the major mode without leaving the key.

## CHROMATIC CHORD ON SUPERTONIC OF MAJOR KEY.

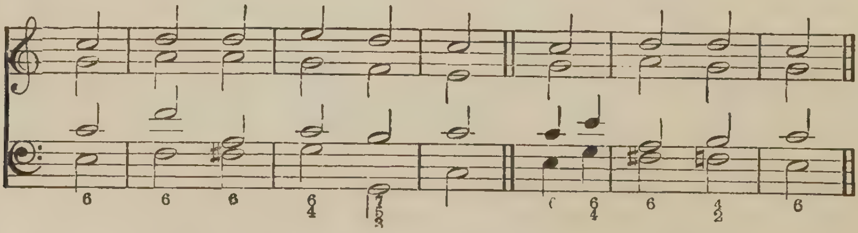
In the key of C this chord looks as if it were threatening a modulation to key of G, thus :—



But if we follow it with a chord that can only belong to the key of C, such as the dominant seventh in the key of C, or by a chord which, while it might belong to several keys, points preferentially to the key of C, such as the second inversion of the chord of C, it is clear that there can be no modulation, thus :—



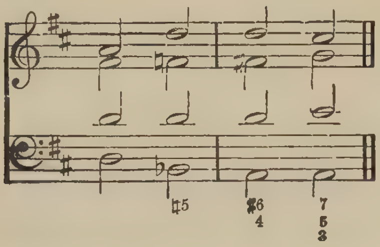
This last illustration shows the chord of D major, followed by the second inversion of the chord of C, the F sharp rising to G; also the same chord followed by dominant seventh in key of C, where the F sharp falls to F natural, thus securing the key of C. Had we allowed the passage to modulate, the chord would no longer have been chromatic; it would have been diatonic in the new key. The first inversion of this chord may be taken—



The third should never be doubled. The second inversion is rarely used.

## CHROMATIC CHORD ON THE MINOR SIXTH OF THE SCALE.

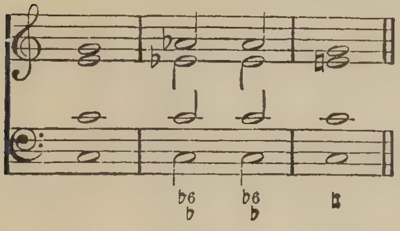
This is a major chord built upon the minor sixth of the major scale; and it can be followed either by the tonic or some inversion of the dominant; generally, however, it is followed by a second inversion of the tonic chord.



The first inversion of this chord may also be used (No. 25), and the second inversion more rarely.

Another chord sometimes used chromatically in the major key is the first inversion of the supertonic, with the diminished fifth. This is also generally followed by second inversion of the tonic (No. 26).

In the minor key the chromatic chords are the major chord on the supertonic of the key, and the major chord on the minor second of the key. All the other chords mentioned, as chromatic in the major, are really diatonic in the minor.



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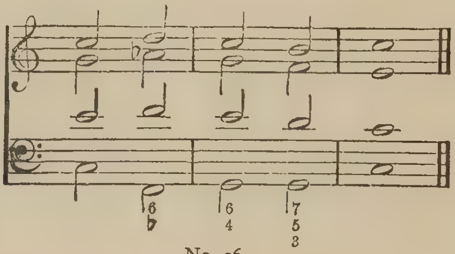
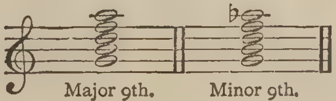


No. 26.

When the chord of the tonic or a dominant discord, whether in root position or inversions, follows a chord seemingly foreign to the key, this chord seemingly foreign to the key will be then identified as one of the chromatic chords.

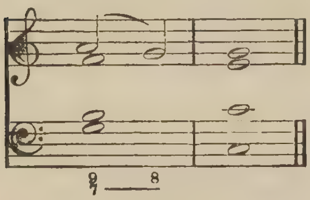
## DOMINANT NINTH AND ITS INVERSION.

To the chord of the dominant seventh we can add either a major or minor third, which is the ninth from the root.

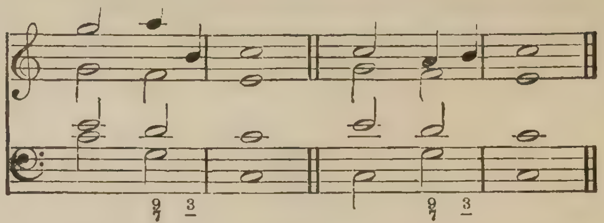


## DOMINANT MAJOR NINTH.

This chord occurs usually in the major key, and can be taken without preparation. The ninth may be resolved either on the root of the same chord, or on the third of the same chord, or on another chord. It is figured $\substack{9\\7}$. When resolved upon the root of the same chord, while the rest of the chord remains, the root should not be heard in any of the upper parts at the same



No. 27.



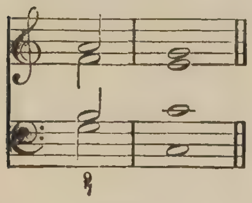
No. 28.

time, but only in the bass, in accordance with the rule that the note on which a discord resolves should not be heard at the same time as the discord, except the root with the ninth, when that root is in the bass (No. 27).

In four-part harmony the fifth is generally omitted. The ninth should not be placed below the third, except when the third remains stationary, and the ninth proceeds to the root. When resolved upon the third of its own root, the ninth either rises a second or falls a seventh. In accordance with the above-mentioned rule, the third must be left out of the chord until heard by the resolution of the ninth (No. 28).

By thus resolving on a note belonging to its own root, it becomes simply a chord of the dominant seventh.

The ninth may also be resolved by falling to the fifth of the tonic chord (No. 29).



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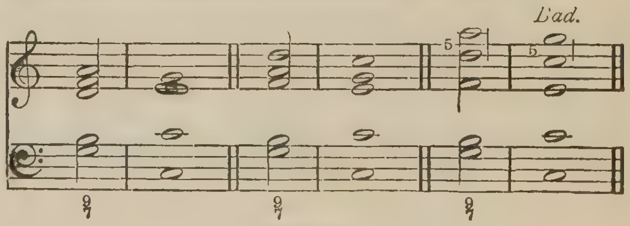
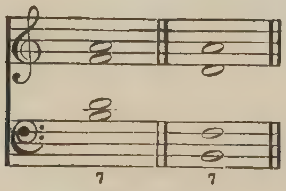


No. 30.

When the fifth of the chord is present, as in five parts, the third in the succeeding tonic chord must either be doubled, or the fifth in the chord of the ninth be placed above the ninth, in order to avoid consecutive fifths; the first alternative—which places the ninth above the fifth and seventh, and doubles the third in the succeeding tonic chord—being the preferable one (No. 30).

In all the inversions of this chord the root is left out. The first inversion of the ninth with the root left out will thus become a chord of the seventh, and is called the chord of the leading seventh, because it starts from the leading note. This, like the direct chord, can be used in the major key only (No. 31). It is figured 7.

It is impossible to mistake this chord of the leading seventh for the dominant seventh, as the intervals are quite differently placed; a dominant seventh consists of one major third and two



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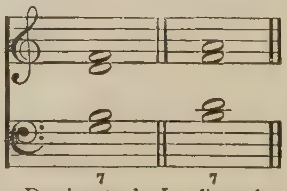
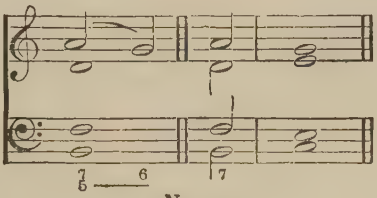


Dominant 7th. Leading 7th.

**No. 32.**

minor thirds, whereas this chord consists of two minor thirds and a major third. The dominant seventh has a perfect fifth, while the chord of the leading seventh has a diminished fifth (No. 32).

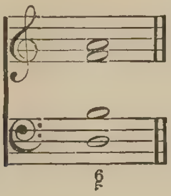
The leading seventh can fall one degree and resolve upon its own root, while the rest of the chord remains, or it may fall one degree to the fifth of the tonic chord (No. 33). Care must be taken to let the fifth, when below the ninth, as in previous example, ascend to the third of the tonic chord, otherwise consecutive fifths will ensue. It is true this progression causes the third of the tonic chord to be doubled, yet of two evils one must choose the lesser ; and the doubling of the major third is obviously preferable to consecutive fifths ; in fact, the doubling is unobjectionable in this instance.



No. 33.

## SECOND INVERSION OF DOMINANT MAJOR NINTH.

The root here is omitted altogether as in the first inversion, consequently this chord appears as the first inversion of the leading seventh, figured $^{6}_{5}$ (No. 34).



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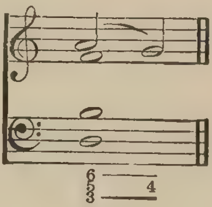
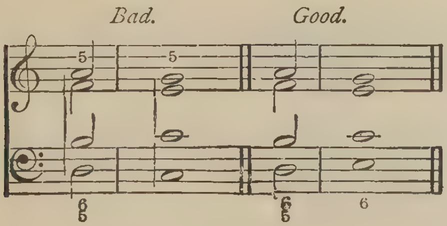


No. 35.

The ninth may, like the direct chord and first inversion, resolve on its own root while the rest of the chord remains (No. 35), or it may fall one degree to the fifth of the tonic chord, which, however, must be taken in the first inversion in order to avoid consecutive fifths (No. 36).



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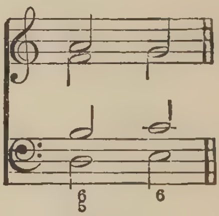
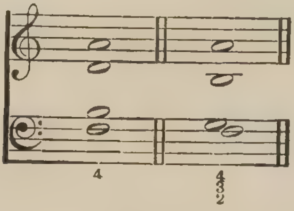


No. 37.

It will be recollected that the one exception to the rule that the dominant seventh should descend one degree was when the second inversion of the dominant seventh proceeded to the first inversion of the tonic, as the seventh could then *rise* one degree. The same progression of the seventh can take place when the second inversion of the ninth proceeds to the chord of the tonic in the first inversion (No. 37).

## THIRD INVERSION OF THE DOMINANT MAJOR NINTH.

This inversion of the dominant ninth has the seventh in the bass. The root is best omitted here also, although it is sometimes heard in an upper part. It is figured $\begin{smallmatrix}6\\4\\3\end{smallmatrix}$ or $\begin{smallmatrix}4\\3\end{smallmatrix}$, or with root $\begin{smallmatrix}4\\3\\2\end{smallmatrix}$ (No. 38).



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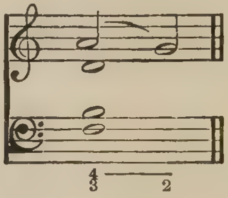
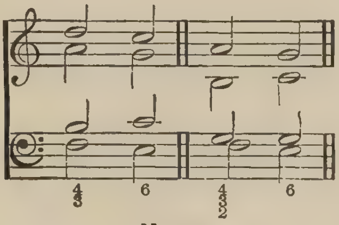


No. 39.

The ninth here may also resolve on the root, while the rest of the chord remains (No. 39) or it may proceed to the fifth of the tonic chord, while the seventh, which is in the bass, takes its usual resolution and descends one degree to the first inversion of the tonic (No. 40). Should the ninth be above the fifth, the third of the tonic chord will require to be doubled in the resolution (No. 41), or the fifth of the dominant must leap to the fifth of the tonic.



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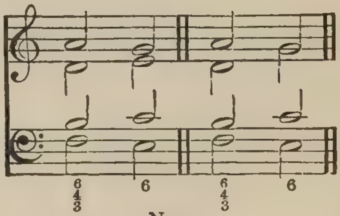
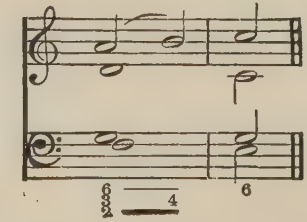


No. 41.

If the third of the chord be left out when the root is heard in an upper part, the ninth may proceed to the third. This resolution then becomes simply the last inversion of the dominant seventh resolving on the tonic chord, thus :—

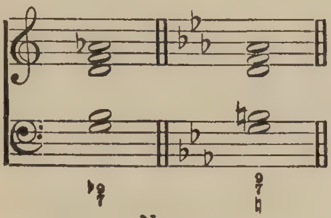


## FOURTH INVERSION OF DOMINANT MAJOR NINTH.

The last inversion has the ninth in the bass; but, owing to the harsh effect of the ninth when placed below the third, it is very seldom, we may almost say never, used in this inversion.

## DOMINANT MINOR NINTH.

The chord of the dominant minor ninth consists of the dominant seventh, with a minor third added to it (No. 42). It is figured $\flat{}^{9}_{7}$ in the major key of C, and in the minor key of C a natural is used to show the leading note $\natural{}^{9}_{7}$ ; when accidentals occur in any part above the bass they are shown as the figuring. This chord is freely used in the major key as well as in the minor ; and there is no objection to the ninth being heard below the third, as the effect is always good (No. 43).



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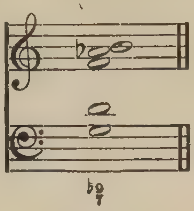
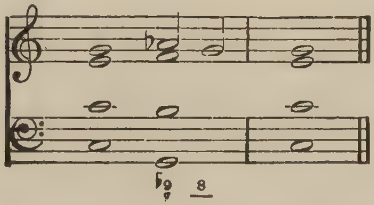


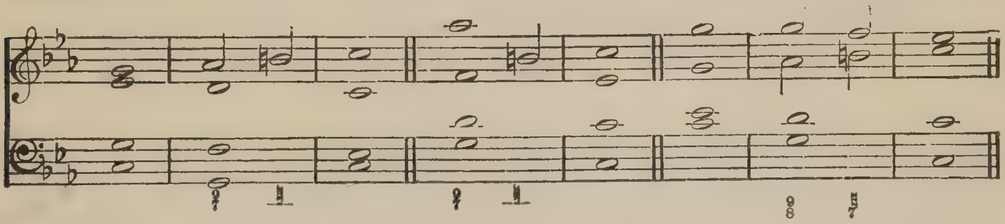
No. 43.

The ninth may be resolved (while the rest of the chord remains) either upon the root or third of the same chord ; or it may resolve with the other notes upon another chord.

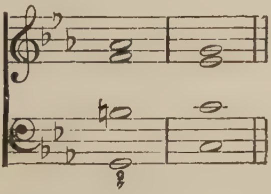
When it is resolved upon the root of the same chord the root should not be heard in an upper part, save in very exceptional cases.



When it is resolved upon the third of the same chord, the ninth may either rise a second or fall a seventh ; and in this case the third must be left out, in accordance with the rule that a discord should not be heard at the same time with its note of resolution. The ninth here may rise an augmented second with good effect. Sometimes the root may be sounded in this case in an upper part.



When the ninth is resolved with the other notes of the chord it is usually upon the tonic, when the ninth falls to the fifth of that chord.

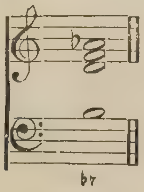


The root is left out in all the inversions.

## FIRST INVERSION OF DOMINANT MINOR NINTH.

The root here being omitted, we have the notes standing in a series of minor thirds above each other; thus in the key of C, by leaving out the dominant root *G*, we have the notes B, D, F, A flat (No. 44). The chord in this inversion is called the diminished seventh; and it can also be resolved on its own root, while the rest of the chord remains (No. 45). It can be used either in the major or minor keys.

Seeing that the bass note itself is the third, it cannot be resolved upon the third of the same chord, as it can when the root of the chord is in the bass. It can also be resolved upon another chord, and then its most natural and common resolution is upon the tonic; and here, as in the major chord, it is well that the fifth of the dominant should rise to the third of the tonic; for it is not good that a diminished fifth should be followed by a perfect fifth when the two notes forming the diminished fifth move downwards by one degree. Of course, in this inversion the fifth of the dominant could also skip to the fifth of the tonic (No. 46). When a little further on we come to deal with enharmonfc changes and modulation, we shall see that some of the most exquisite effects are got by enharmonically changing one or more notes of this chord—so as to alter the root—and therefore changing the key to which this diminished seventh belongs.



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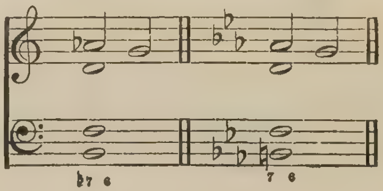
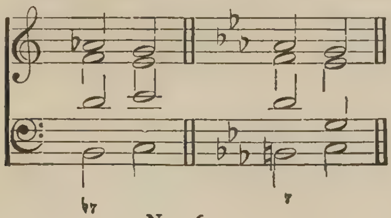


No. 45.

For instance, if we take the notes B, D, F, A flat (No. 47), the root is G, the dominant in the key of C; but if we enharmonically change the A flat to G sharp (No. 48), and then place the chord in thirds, we get G♯, B, D, F (No. 49). We here bring about the first inversion of the dominant minor ninth on E, which is the dominant of A major or minor; and it would accordingly resolve on that chord. The intervals of this chord are the minor third, diminished fifth, and diminished seventh, from which last interval it takes its name.



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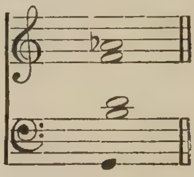

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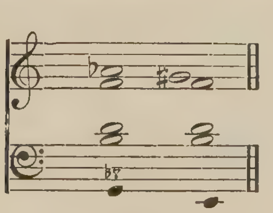

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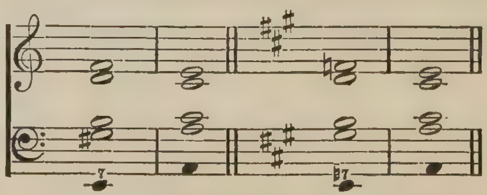
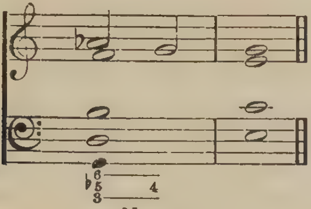


No. 49.

## SECOND INVERSION OF DOMINANT MINOR NINTH.

The root is also here omitted, and the discord can be resolved either upon its own chord, or upon a chord having another root (No. 50). Here it is resolved upon the root of its own chord, thus forming the second inversion of the dominant seventh. In No. 51 it is resolved upon the fifth of the tonic chord.



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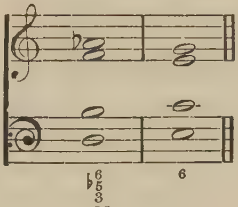
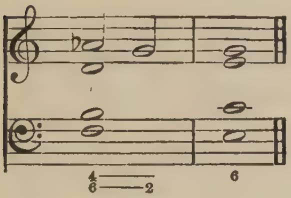


No. 51.

## THIRD INVERSION OF DOMINANT MINOR NINTH.

The root here is left out, and must not be sounded in any upper part along with the minor ninth, as it can be in the case of the major ninth. In this inversion the minor ninth may also resolve upon its own chord, thus making the last inversion of the dominant seventh (No. 52), or upon another chord, usually the first inversion of tonic (No. 53). There is another resolution of this inversion which seems a little strange, and which is yet often used; that is where the seventh, instead of as usual descending one degree to the first inversion of the tonic, leaps down to the root thus (No. 54). Examples of this resolution occur frequently in the works of the great masters.



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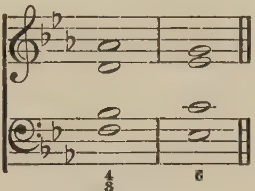

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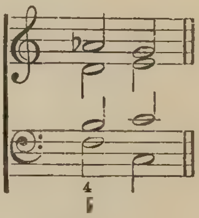
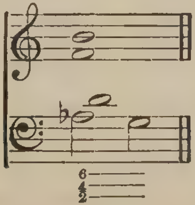


No. 54.

## FOURTH INVERSION OF DOMINANT MINOR NINTH.

This inversion has the ninth in the bass, and the root is omitted. Although the last inversion of the major ninth was said to be very rarely used, owing to the harshness of the ninth being below the third, yet the minor ninth can be freely used in the last inversion, and always with excellent effect. It can also be resolved on its own chord, thus (No. 55)—or on a chord with



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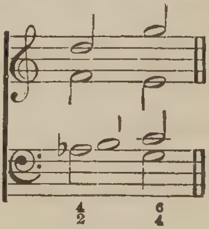
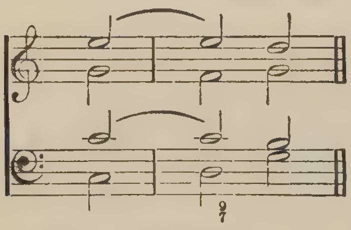


No. 56.

another root, the most usual one being the tonic second inversion (No. 56). It is usually figured $\substack{6\\4\\2}$ or $\substack{4\\2}$. In the first example, the minor ninth proceeds to the root of the chord, the other notes remaining. In the second example, the minor ninth is resolved along with the other notes of the chord, on the second inversion of the tonic.

## SECONDARY OR ESSENTIAL CHORDS OF THE NINTH.

These are just the same as the secondary or essential chords of the seventh beforementioned, with the addition of a ninth added ; and they follow the same rules. They are resolved on a chord, the root of which is a fourth above their own root (No. 57). The ninth being always a dissonant note should be prepared, and then resolved on the fifth of the following chord. These ninths can be taken in root position on any note of the scale, provided that the chord, the root of which is a fourth above, is one that can be taken in root position. If the fifth of the chord is written below the ninth, it must rise to the third of the following chord to prevent consecutive fifths (No. 58). Any note that makes a discord with the bass should be prepared. There are four inversions of this chord, the last of which is not used. The root is left out in all the inversions. The first inversion of the ninth will then, to all appearance, be a chord of the seventh ; but as the resolution of each is a fourth above the root, these resolutions will be both on different chords, thus (No. 59). Here we have the first inversion of the chord of the ninth, the root of which is C, resolving on the chord of F, a fourth above. Our next example will illustrate the same notes, being a chord of the seventh (No. 60). Here we have the same notes as in the first inversion of the chord of the ninth ; but in this case it is a chord of the seventh on E, resolving on the fourth above, namely, on chord of *A*. It will be clear, then, that a chord of the seventh can be treated and resolved in two different ways ; either as a chord of the seventh, resolving on the fourth above, or as the first inversion of a chord of the ninth, resolving on the note above, which note is the fourth above the root of the ninth.



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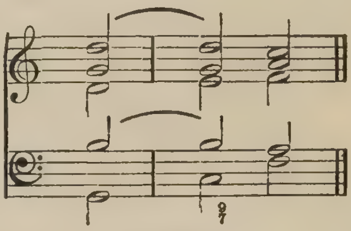

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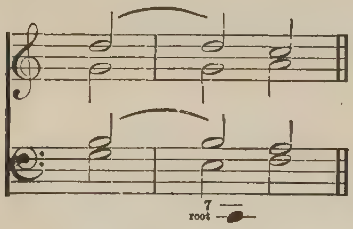

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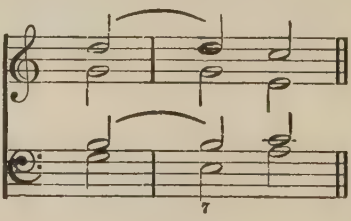
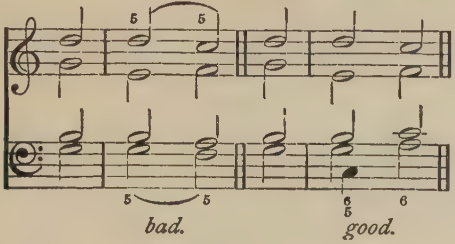


No. 60.

The second inversion of the chord of the ninth is resolved on the first inversion of the following chord. This inversion of the ninth has the fifth in the bass and the root left out. If it were resolved on the root of the next chord, consecutive fifths would necessarily ensue (No. 61). Here the second inversion of the root C resolves upon the first inversion of the root F. This chord is also identical with the first inversion of the seventh, resolved on the root a fourth above, thus (No. 62). Here is the first inversion of the chord of the seventh on E, resolving on the root of the chord A, the fourth above E. The third inversion of the ninth has the seventh in the bass, and resolves on a first inversion (No. 63). This chord is not used as the second inversion of the seventh on E. These resolutions of the ninth explain one very common resolution of the dominant seventh, called the interrupted cadence. Instead of resolving on the tonic, the dominant in the interrupted cadence resolves on the submediant.



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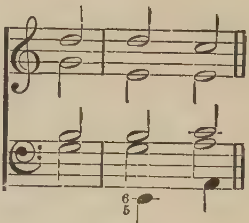

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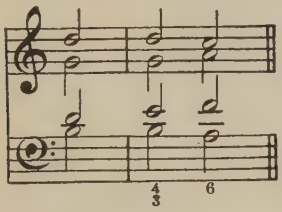

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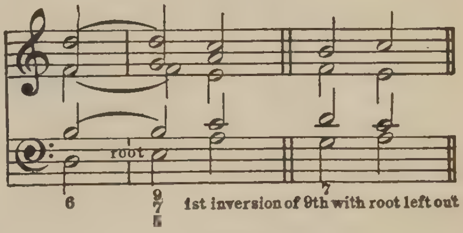


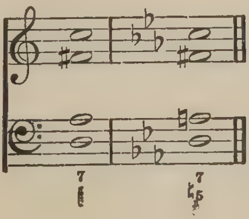
No. 64.

If we take the chord of the ninth on the mediant, and leave out the root, we have the first inversion of the ninth, which is just the dominant resolving on the fourth above the root of the ninth, which is the submediant, as in foregoing example (No. 64). Thus the dominant seventh can either resolve upon its own tonic according to the rule of the seventh, or upon the chord of the submediant, according to the rule of the ninth.

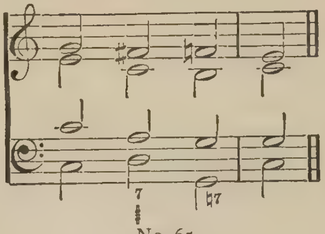
## CHROMATIC DISCORDS OF THE SEVENTH AND NINTH.

These are chords consisting of exactly the same quality of intervals as the dominant seventh and ninth, but used upon the supertonic and tonic without causing a change of key. The supertonic is, in fact, the dominant of the dominant, and the tonic is the dominant of the subdominant, but used without making a modulation into these keys. They can be used either in the major or minor keys.

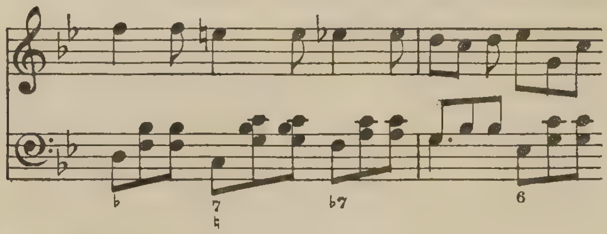
One of the most frequently used of these chords is the supertonic seventh. It is a minor seventh added to the chromatic concord of the supertonic; thus, in the key of C the chord would be the following :—



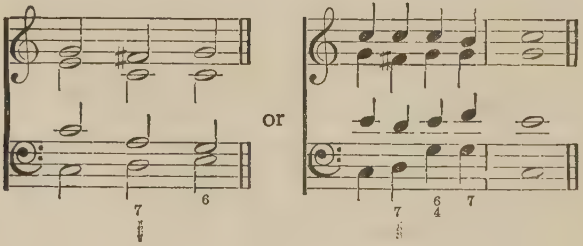
This chord has all the appearance of the dominant seventh in the key of G, and did we proceed to the triad of G, a modulation to that key would certainly be made. In order, therefore, to prevent modulation, this chord must be followed by another chord specially belonging to the original key, such as a dominant discord, or the tonic chord, either in root or inversion. The foregoing is an example of the supertonic discord followed by the dominant discord (No. 65) Another example of this will be found in Verdi's "Il Trovatore," thus—



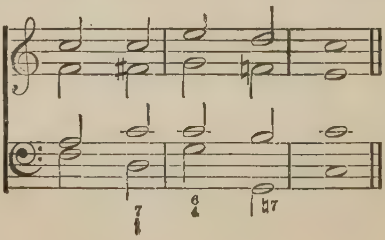
No 65.



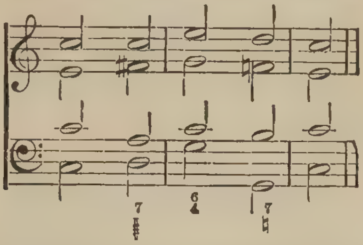
Here the key is B flat, and the chromatic supertonic is C, with the major third, the accidental E natural, which is the leading note of the dominant key of F, falls to the E flat, which is the dominant seventh of the original key ; and the seventh of the supertonic according to the usual rule falls a second to the third of the dominant. The other resolution of the supertonic discord is when it proceeds to the chord of the tonic, generally to one of the inversions—



The seventh here remains to be a note of the following chord, and when this is the case, the seventh may be doubled, and one of the two sevenths is free to leap as a concord, thus—

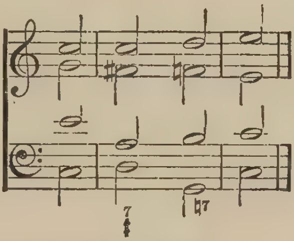


Here the seventh C is doubled, and one of them leaps to E, the third of the chord of C, while the other remains. The supertonic seventh may, without being doubled, leap as a concord, provided that the fifth in the chord of the seventh proceeds to the same note in the next chord that was the seventh in the chord it has just left, as in the following example :—

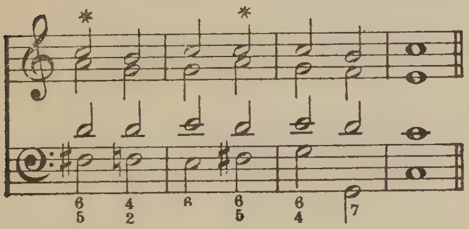


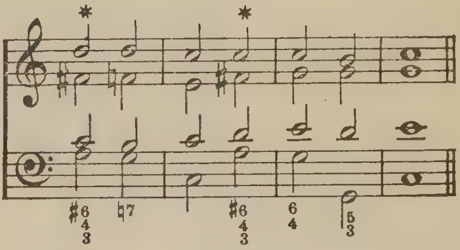
In this example, A, which is the fifth note of the supertonic discord, leaps to the C, the root of the tonic, which note was the seventh of the supertonic discord.

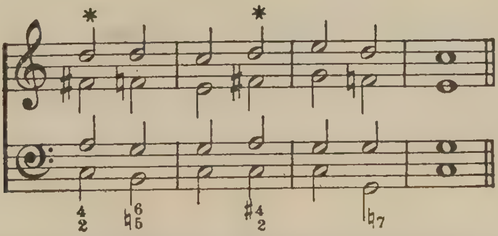
When this chord is followed by a dominant discord, the seventh of the supertonic may rise to the fifth of the dominant, provided that the fifth of the supertonic also moves to the third of the dominant, as in the following example :—



This chord may also be taken in the three inversions :—





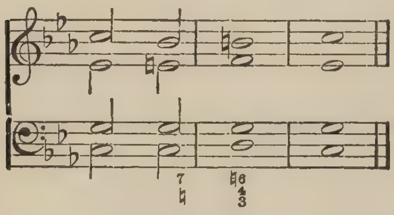


In the first of the three above examples, the supertonic seventh is in the first inversion, and is resolved first upon the last inversion of the dominant seventh, and next on the second inversion of the tonic chord.

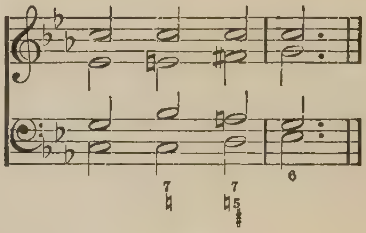
In the second example, the supertonic seventh is in the second inversion, and is resolved first upon the root of the dominant seventh, and next, upon the second inversion of the tonic chord.

In the third example, the supertonic seventh is in the last inversion, and is resolved first upon the first inversion of the dominant seventh, and next, upon the root of the tonic chord. (This last resolution is somewhat rare.)

A chromatic discord of the seventh can also be used upon the tonic of both major and minor keys, the third of which tonic must always be major. It is precisely the same chord as the dominant of the subdominant; only, to prevent modulation, it must be followed either by a dominant or a supertonic discord. The third and seventh in this chord must never be doubled; if it resolve upon a dominant discord, the third will rise a semitone, and the seventh will also rise a chromatic semitone, thus (No. 66)—



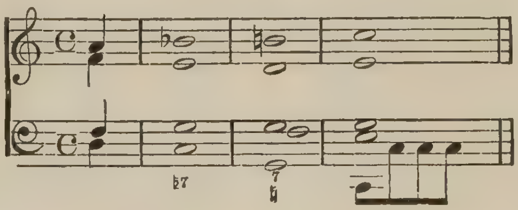
No. 66.



No. 67.

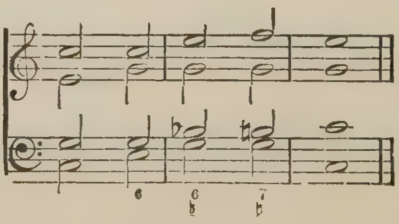
If the tonic seventh resolve upon a supertonic discord, the third will rise a major second, and the seventh will descend a minor second, as in example (No. 67).

A very clear example of the tonic seventh resolving on the dominant is to be found in Beethoven's Quartet, Op. 59, No. 3, thus—



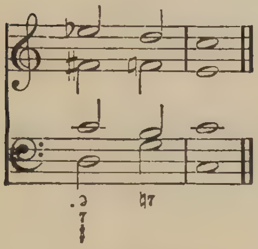
An exceptional resolution of the third is shown in the preceding example. When the tonic seventh is followed by the dominant seventh, the third of the tonic seventh may fall one degree to the fifth of the dominant, provided the fifth in the tonic seventh proceed to the seventh in the dominant chord. In the above example the third of the tonic seventh, E, instead of rising to the dominant seventh, F, proceeds to the fifth of dominant, D, while the fifth of the tonic seventh, G, proceeds to the dominant seventh, F.

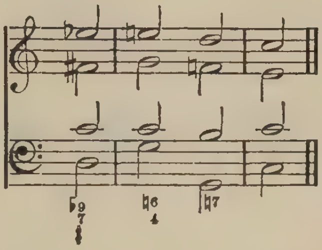
In the second inversion of this chord the root may be omitted, but the seventh may not be doubled.

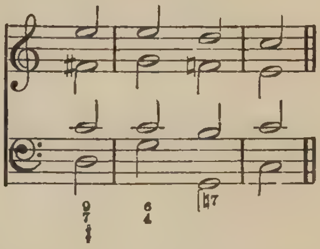


## CHROMATIC DISCORD OF SUPERTONIC NINTH.

This chord consists of a major or a minor ninth added to the chord of the supertonic seventh, before described. This is really the dominant of the dominant; but to prevent modulation, it must be followed either by a dominant discord, or by some inversion of the tonic chord. The ninth can resolve either on the root or third of its own chord, or some note of another chord. The major ninth can only be used in the major key. The minor ninth can be used either in the major or the minor key.

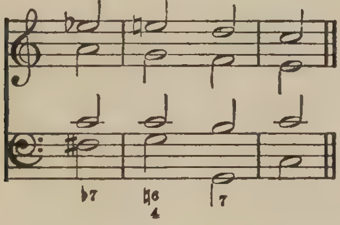




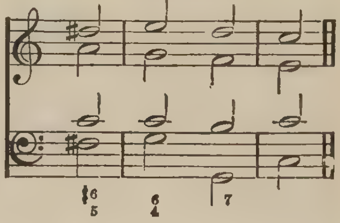


In the first of the above examples the minor ninth, E♭, proceeds to the fifth of the dominant, D. In the second example the minor ninth, E♭, proceeds to the third of the tonic chord, E♮. In the third example the major ninth, E♮, remains to be the third of the tonic chord, E♮. In the inversion of this and other chromatic discords, when the root is always absent, the minor ninth is sometimes written as a chromatic semitone above the root; that is, instead of the ninth being lowered a chromatic semitone, the root is raised a chromatic semitone; this is an enharmonic alteration, and is called false notation. It is a confusing though expedient device to save accidentals. The following example will show how it is written:—

True Notation.

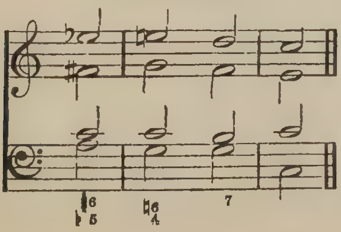


False Notation.

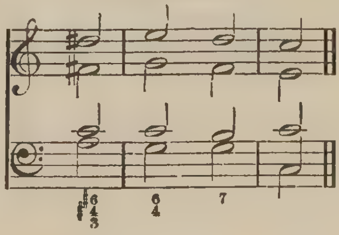


In the first of these examples the first inversion of the supertonic minor ninth is shown, the minor ninth, E♭, rising to the third of the tonic, E♮. In the second example the same inversion is shown, but the minor ninth, E♭, is enharmonically changed to D♯, which on keyed instruments is the same note, thus saving the natural before the following E. The next two examples will show the second inversion of the supertonic minor ninth and its enharmonic equivalent.

True Notation.



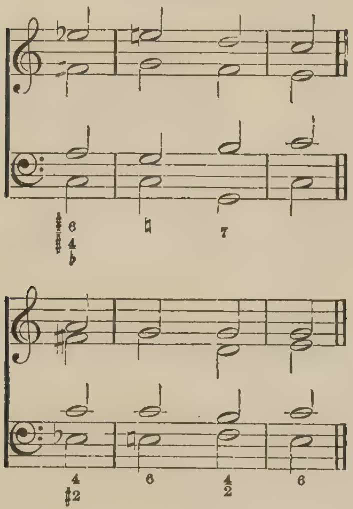
False Notation.



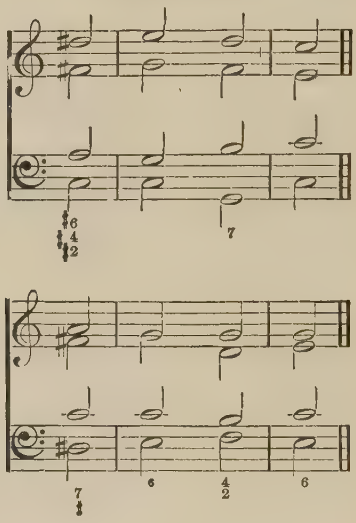
In the foregoing examples, the first shows the supertonic minor ninth of the key of C in the second inversion, the E♭ rising to E♮. The second example shows the E♭ changed to D♯, which also proceeds to E♮, the third of the tonic chord.

In the examples which follow, the third and fourth inversions are shown with the enharmonic change—

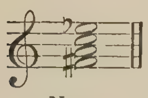
True Notation.



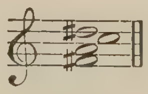
False Notation.



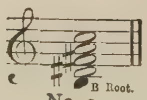
This chord of the diminished seventh, as the minor ninth without the root is called, consists of a series of three minor thirds; and when we wish to find the root, we place the notes one above the other so that they lie in a series of minor thirds; the root will then be found a major third below the lowest note. Thus, take for example the chord we have been dealing with, F♯, A, C, E♭ (No 1), the root would be found a major third below F♯, namely D; or take the enharmonic change—



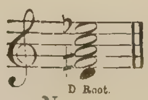
No. 1.



No. 2.



No. 3.

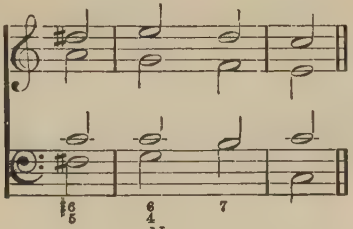


No. 4.

equivalent (No. 2), lay it out in thirds, thus (No. 3): the root will be a major third below D♯, namely, B.

Another way to find the root is to take the sharpest note in the chord, that is, the note that would have the greatest number of sharps, or the fewest number of flats, in the major scale of which it is the tonic: the root of the chord will be the major third below that note. For example, if we take the chord F♯, A, C, E♭, the note that has the greatest number of sharps in that chord is F♯, which has six sharps, and the major third below F♯ is D. Therefore, D is the root of the chord (No. 4).

In using the false notation of this chord, it would seem to have B for its root (No. 5), as D♯ has more sharps than F♯, and B is the major third below D♯; B, therefore, is the root of the chord: but the passage above is in C major, and the fundamental discords of C must belong either to dominant, tonic or supertonic, of any of which B forms no part. D♯ also is not in the

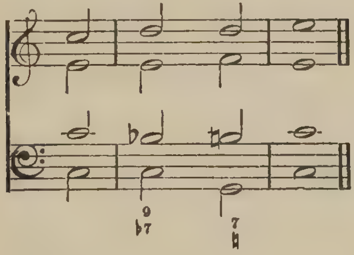


No. 5.

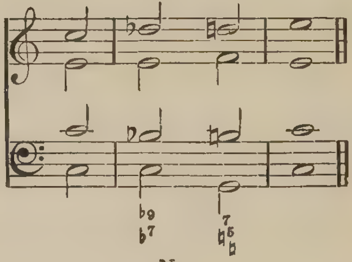
harmonic chromatic scale of C, but its enharmonic equivalent E♭ is the minor third of that scale; if therefore we substitute E♭ for D♯ we get D as the root of the chord, which is the supertonic discord belonging to the key.

## CHROMATIC DISCORD OF TONIC NINTH.

This chord is practically the dominant of the subdominant, with the major or the minor ninth added, but used without modulating from the key of which it is the tonic. It may be used either in the major or minor form of the key; and, to prevent modulation, must be followed either by a dominant or supertonic discord. The following example shows the tonic major ninth followed by the dominant discord (No. 6). The next example shows the tonic minor ninth followed by dominant discord (No. 7).

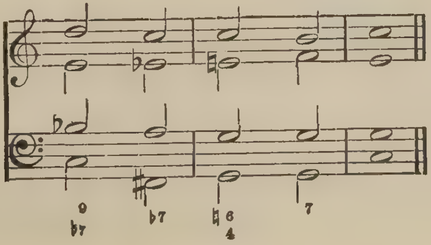


No. 6.

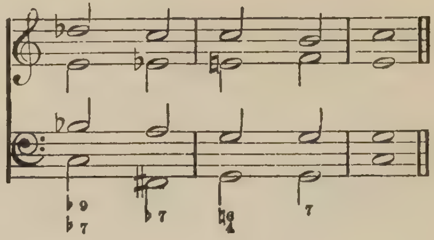


No. 7.

The next illustration shows the tonic major ninth followed by the first inversion of the supertonic minor ninth—



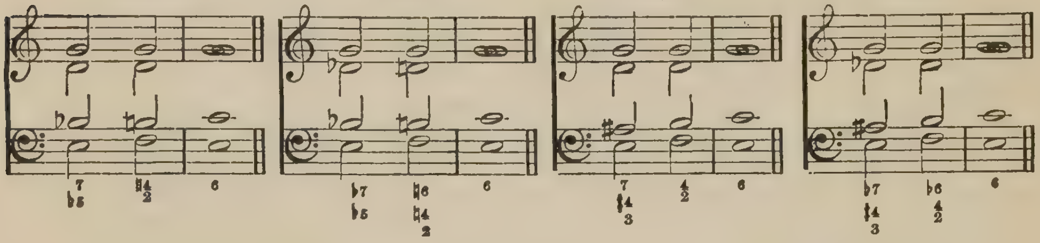
The following is the tonic minor ninth succeeded by the first inversion of the supertonic minor ninth :—



In all the inversions of this chord the root is left out. The following examples will show the first inversions of the major and minor ninths on the tonic, followed by dominant harmony, with both the true notation and also with the false notation :—

True Notation. False Notation.

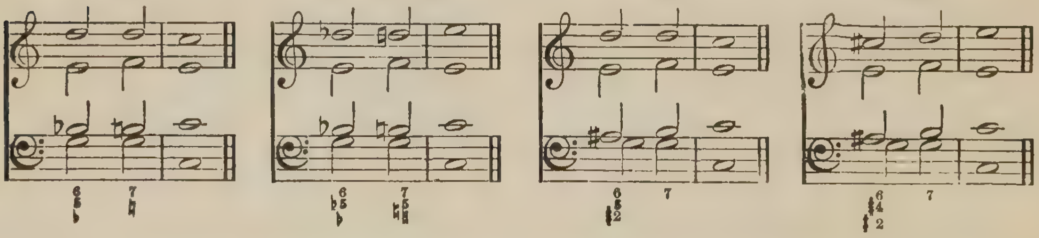
Major. Minor. Major. Minor.



The next examples show the second inversions of the tonic major and minor ninths, followed by dominant harmony, with the true notation, and also with the false :—

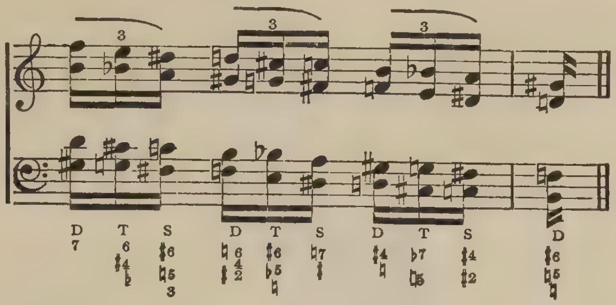
True Notation. False Notation.

Major. Minor. Major. Minor.



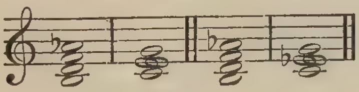
It has been said that every chord of the minor ninth without the root is called the diminished seventh ; and it has also been shown, that those on the tonic, supertonic, and dominant can be used in the same key, without inducing modulation.

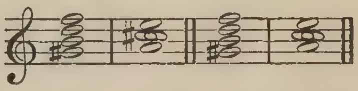
The whole chromatic scale can be harmonised by a series of diminished sevenths on these three chords, resolving one upon the other, each part moving by step of a semitone, the dominant resolving on tonic, the tonic resolving on supertonic, and supertonic resolving on dominant, and so on, continuing the repetition of this sequence as long as we please. Meyerbeer, in his opera of "Dinorah," has an example of this sequence of diminished sevenths, harmonising the chromatic scale in the key of A minor. The succession of diminished sevenths is on the dominant, tonic, supertonic, repeated three times in succession on different inversions. All the four parts move by step of semitone in similar motion, from each chord to the next, thus :—



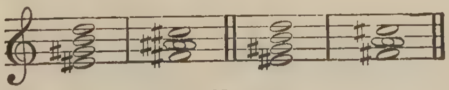
The first chord of the diminished seventh here is the first inversion of the dominant minor ninth of the key of A minor, E, G♯, B, D, F, the root E being omitted. The second chord, on which the first resolves, is the third inversion of the tonic minor ninth, without the root, A, C♯, E, G, B♭. The third chord, on which the second resolves, is the second inversion of the supertonic minor ninth with the root omitted, B, D♯, F♯, A, C. The fourth chord, on which the third resolves, is the fourth inversion of the dominant minor ninth, without the root, E, G♯, B, D, F. The fifth chord, on which the fourth resolves, is the second inversion of the tonic minor ninth, the root omitted, A, C♯, E, G, B♭. The sixth chord, on which the fifth resolves, is the first inversion of the supertonic minor ninth, with the root omitted, B, D♯, F♯, A, C. The seventh chord, on which the sixth resolves, is the third inversion of the dominant minor ninth, the root being left out, E, G♯, B, D, F. The eighth chord, on which the seventh resolves, is the fourth inversion of the tonic minor ninth without the root, A, C♯, E, G, B♭. The ninth chord, on which the eighth resolves, is the fourth inversion of the supertonic minor ninth, the root omitted, B, D♯, F♯ A, C. The tenth chord, on which the ninth chord resolves, is the second inversion of the dominant minor ninth without the root, E, G♯, B, D, F. The sequence of chords in this passage is dominant, tonic, supertonic; dominant, tonic, supertonic; dominant, tonic, supertonic; dominant.

By the enharmonic change of each note in the diminished seventh, we can get a new dominant, each proceeding to its own tonic, thus going to as many different keys as there are notes in the chord. For instance, if we take the diminished seventh, B, D, F, A♭, B has the greatest number of sharps, and the major third below B is G; G, therefore, is the root of the chord, which will resolve on the tonic C major or minor (No. 8). If we change the A♭ to G♯, and lay out the chord


No. 8.


No. 9.

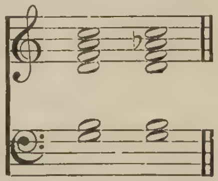
in a series of thirds, G♯ has then the greatest number of sharps, and the major third below G♯ is E, which is the root of the chord, and the dominant of A; the chord will then be G♯, B, D, F, resolving on the tonic A major or minor (No. 9). If we change the F♮ into E♯, and lay out the


No. 10.

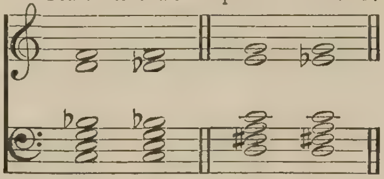
chord in thirds, E♯ has the greatest number of sharps, and the major third below E♯ is C♯, which note is the root of the chord, and the dominant of F♯, the chord will then be E♯, G♯, B, D, resolving on the tonic F♯ major or minor (No. 10).

## CHORDS OF THE ELEVENTH.

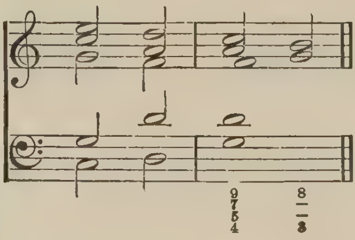
This chord is formed by the addition of another third to the chord of the ninth. It will be a minor third above the major ninth, or a major third above the minor ninth. This chord is always a perfect eleventh above the root, that is, the octave above the perfect fourth. It is principally used on the dominant, although there are cases (but very exceptional ones) in which it is used like the ninth, both on the tonic and supertonic :—



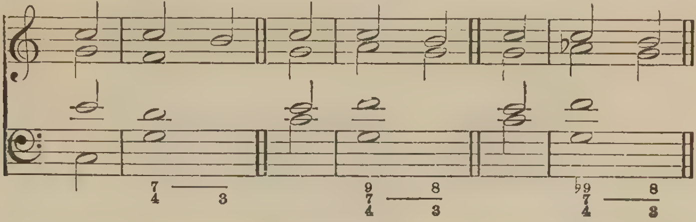
The foregoing example shows the eleventh on the dominant of the key of C, with both the major and minor ninth. The following examples will show the eleventh on the tonic and supertonic, with major and minor ninths :—


Tonic Eleventh. Supertonic Eleventh.

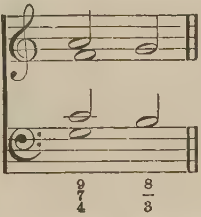
It is clear that all the six notes of this chord can never be heard at the same time. The rule which forbids the note on which a dissonance resolves being heard at the same time as the dissonance, prevents that combination ; for if the eleventh resolves upon the third, the third must be left out of the chord ; and if the eleventh should resolve upon the fifth, the fifth must be left out of the chord—



In this example, the eleventh proceeds to the third, which note is left out in the chord, and the ninth goes to the root, which is not heard in the upper part. The eleventh here looks like the suspension 4 to 3 ; but it is not prepared from the previous chord, therefore it is not a suspension. This chord of the eleventh is always accompanied either with the seventh or ninth, and thus can be easily distinguished from the suspension 4 to 3, even though the eleventh should be prepared. It is clear that in four-part harmony, two of the notes of this chord must be left out. This chord may either resolve upon itself, or upon another chord. When it resolves upon itself, the eleventh may either proceed downwards to the third, or it may ascend to the fifth. It may be accompanied with the fifth and seventh, or with the seventh and ninth.

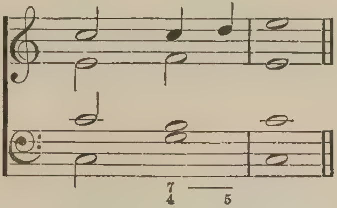


In the first of the previous examples the eleventh, C, proceeds to the third, B; it is accompanied by the seventh, F, and the fifth, D. In the second example the eleventh is accompanied by the major ninth and seventh; the major ninth, A, proceeding to the root G, while the eleventh proceeds to the third. In the third example the minor ninth is used, all three, when resolved, making the chord of the dominant seventh. It will be noticed in the figuring that the eleventh is usually figured 4. When 4 to 3 is not accompanied by any other figure, the fourth is a suspension, but when accompanied by another figure, the fourth then is the eleventh, thus, $\begin{smallmatrix}7 & - \\ 4 & 3\end{smallmatrix}$ or $\begin{smallmatrix}9 & 8 \\ 7 & - \\ 4 & 3\end{smallmatrix}$. The eleventh may be either at the distance of a fourth, or an eleventh from the root; unlike the ninth, which must always be at the distance of a ninth when it resolves upon a root.

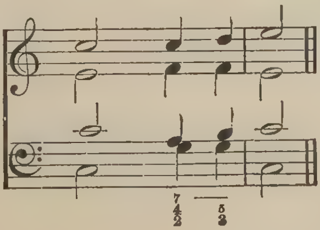


Here the eleventh is at the distance of a fourth, and the ninth and seventh above it.

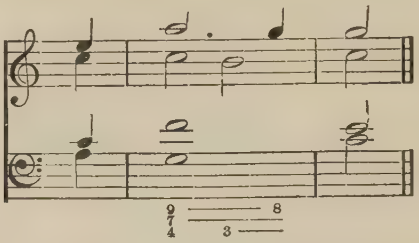
The eleventh may also be resolved upwards on the fifth, when it may be accompanied by the third and seventh. The third in all other cases is left out.



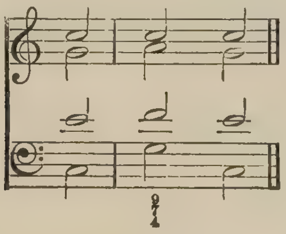
When the eleventh is resolved upwards on the fifth, it is more usual to accompany it with the seventh and ninth, and to allow the ninth to rise to the third when the eleventh rises to the fifth. The only case when the ninth may be at the interval of a second from the root is when it rises to the third. Whenever the ninth resolves upon the root it must always be at the distance of an actual ninth.



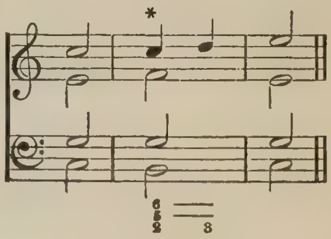
A very good effect is produced by allowing the discords to resolve one after the other, thus :—



Here the eleventh, C, first resolves upon the third, B ; after which the ninth, A, resolves upon the root G ; then the seventh, F, resolves on the third of following chord, E. The eleventh may also be resolved along with the rest of the chord, upon the tonic : the eleventh, then, does not move, but remains to be the root of the next chord. In this case the third and fifth of the chord of the eleventh are best omitted (No. 11).



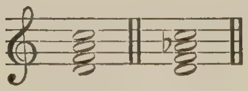
No. 11.



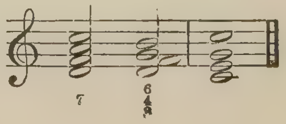
No. 12.

As there are five notes besides the root in the chord of the eleventh, each of these notes may be taken as bass note, thus giving five different inversions. The first inversion, with the third in the bass, is very rarely used, and only when the eleventh rises to the fifth, thus (No. 12).

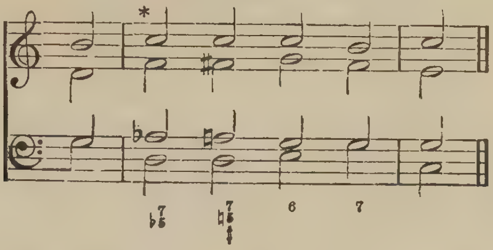
In all the other inversions both the root and third are generally left out. The second inversion of the chord of the eleventh will, therefore, consist of the fifth, seventh, ninth and eleventh.



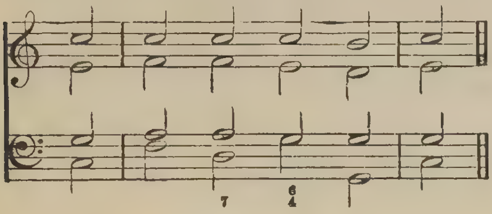
It will be seen that this chord is identical with the essential chord on the supertonic ; that chord, therefore, being really this inversion of the eleventh, can be taken unprepared. It cannot be mistaken for a dominant or chromatic seventh, as its first third is minor, and the third, either of a dominant or supertonic fundamental supertonic, must be a major third. This inversion of the eleventh may be resolved either on its own root—



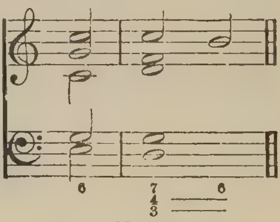
Or it may be resolved upon a fundamental supertonic discord—



Or it may be resolved upon a tonic chord, generally on the second inversion (No. 13). In this inversion the root may be used if the ninth is not present, thus (No. 14).

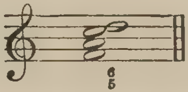


No. 13.

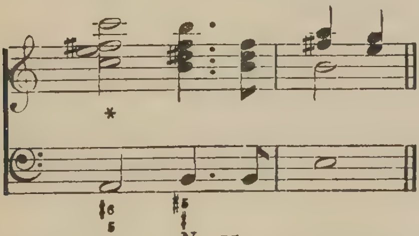


No. 14.

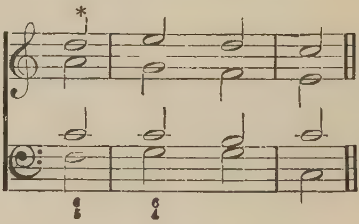
In the third inversion of this chord the seventh is in the bass; and as the root is almost always left out, it is practically the first inversion of the essential chord on the supertonic, in which position the fifth can be taken unprepared, being the eleventh—



It is so common in this position that it goes by the name of the *chord of the added sixth*; that is, a major sixth added to the subdominant chord; but the subdominant is not the root of the chord, as the subdominant chord itself is the seventh, ninth, and eleventh of the dominant chord. In this inversion the seventh, *i.e.*, the bass-note, is free to rise, or fall, or skip, as the root and third being absent, there is no note in the chord which forms a dissonance with the seventh. Mendelssohn begins his " Wedding March " with this chord of the added sixth (No. 15).



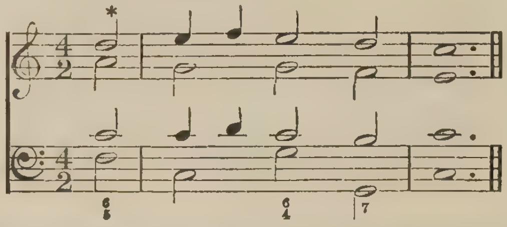
No. 15.



No. 16.

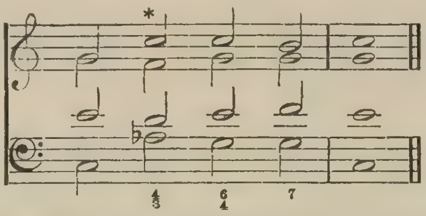
The opening here is evidently in E minor, of which the chord, A, C, E, is the subdominant, with the F♯ added, which is the major sixth from A. The root of the chord is evidently B, the dominant. The seventh in the bass being free, resolves upwards to the root; the ninth, C, descends to the root; the eleventh, E, descends to the third; the fifth, F♯, remains. In the following example (No. 16) this chord of the added sixth resolves on the second inversion of the tonic.

Here the seventh, F, in the bass ascends to G, second inversion of the tonic, C; the eleventh, C, remains; the ninth, A, descends to G; and the fifth, D, ascends to E. In the next example, the seventh will be seen to leap to the resolution—



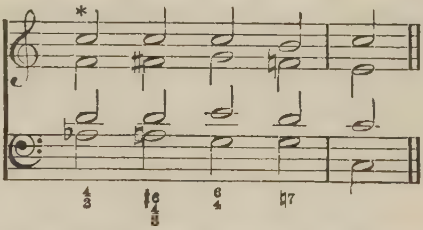
Here the seventh, F, in the bass leaps to the root of the next chord; the eleventh, C, remains; the ninth, A, descends one degree; and the fifth, D, ascends to the third of the next chord.

The fourth inversion of this chord has the ninth in the bass, frequently the minor ninth. It is usually accompanied with the fifth, seventh, and eleventh from the root, placed above the ninth. It is thus practically the second inversion of the essential chord of the supertonic, with the seventh of the said supertonic being taken unprepared—



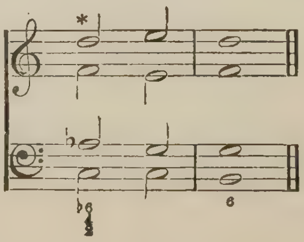
It is resolved here on the second inversion of the tonic, the ninth proceeding to the fifth of next chord, the fifth ascending to the third, the seventh ascending to the fifth, and the eleventh remaining to be the root.

It may also be resolved upon the chromatic chord of the supertonic seventh.

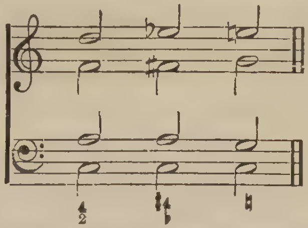


Here the ninth proceeds to the fifth of the supertonic, the fifth remains to be the root of the supertonic, the seventh rises a chromatic semitone to the third of the supertonic, and the eleventh remains to be the seventh of the supertonic.

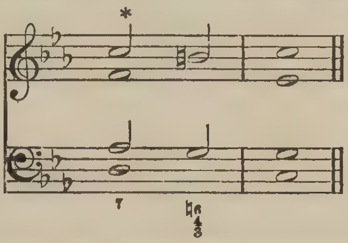
The last inversion of this chord has the eleventh in the bass, which may be taken unprepared, accompanied by the fifth, seventh, and ninth above it, being the third inversion of the essential chord on the supertonic.



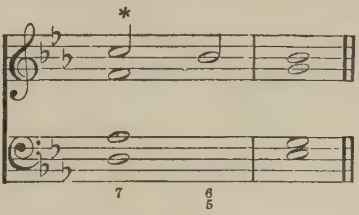
In the foregoing example the eleventh remains to be the root of the tonic chord, the minor ninth proceeds to the fifth of the tonic chord. This inversion may also resolve on the chromatic chord of the supertonic, thus—



In the example just given the eleventh in the bass remains to be the seventh of the supertonic, the major ninth remains to be the fifth of the supertonic, the seventh rises a chromatic semitone to the third of the supertonic, and the fifth rises a diatonic semitone to the minor ninth of the supertonic. When the seventh, ninth, and eleventh are used without any of the other notes of the chord, they simply form the subdominant chord; being all concordant with each other they are free in their progression. It will be noticed that the chord of the eleventh in one key, with its root and third left out, and having the minor ninth, consists of the same notes as the major ninth in another key, having its root left out, in this way enabling us to proceed to either of those keys at pleasure, thus—

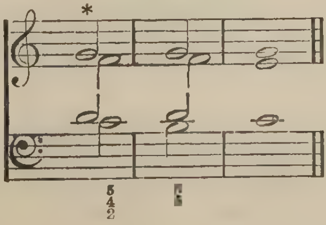


Here is dominant eleventh in the key of C minor with root and third left out: the eleventh, C, proceeds to the third, B, of the same chord; and the minor ninth, A♭, proceeds to the root of the same chord, thus making the second inversion of the dominant seventh in the key of C minor. The next example will show the same notes as the dominant major ninth of another key—



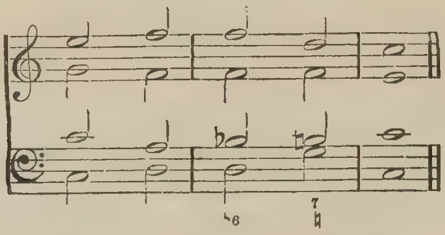
Here is the dominant major ninth in the key of E♭ major, with the root left out: the ninth, C, proceeds to B♭, the root of the same chord, and the other notes remain; thus making the first inversion of the dominant seventh in the key of E♭ major.

Sometimes in rare cases the root is heard in the last inversion, instead of the ninth, when the chord is almost invariably resolved on itself, thus—



Here the eleventh in the bass resolves upon the third of the same chord, the root, seventh, and fifth remaining, thus making the first inversion of the dominant seventh.

It is exceedingly rare to find the eleventh on either the tonic or supertonic chromatic discords ; it is generally confined to the dominant, and in the few cases where it is found, the root and third are left out, and often the fifth also ; thus leaving the other notes unfettered in their progression, no dissonance being against them. One example of tonic eleventh may be given—



Here the tonic eleventh in key of C, with the seventh and ninth, appears as the first inversion of the chord of B♭. The eleventh, F, is doubled, one proceeding to the fifth of the dominant chord, and the other remaining to be the seventh of the dominant.

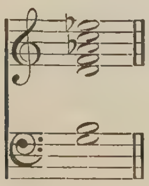
The seventh, B♭, rises by chromatic semitone to the third of the dominant chord, and the ninth of the tonic eleventh, D, proceeds to root of dominant.

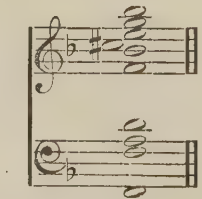
## CHORDS OF THE THIRTEENTH.

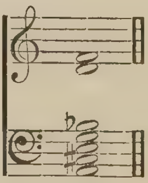
Above the eleventh can be added another third, which is called the thirteenth. This is the last of the series of thirds built above the dominant. It can be taken also on the tonic and supertonic, and may be either major or minor. The minor thirteenth may be freely used in a major key, but the major thirteenth can never be used in a minor key. We shall look first at the dominant minor thirteenth.

This chord is formed by a successive series of thirds from the dominant root (No. 17).

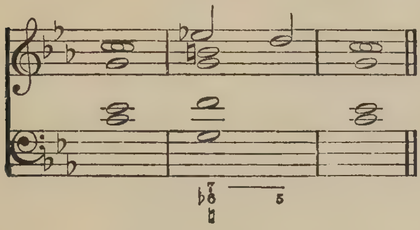
Only a selection of the accompanying notes is used with the thirteenth, but there are cases where the complete chord has been used by composers. An example will be found in Beethoven's Choral Symphony, first bar of introduction to baritone solo, where the opening chord is the following (No. 18). This is the last inversion of the dominant thirteenth in the key of D minor, with the thirteenth, F, in the bass. The chord in its root position would be (No. 19).

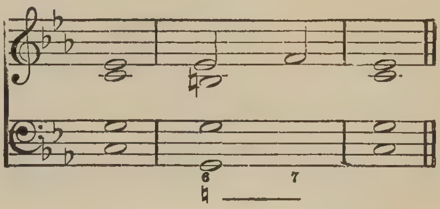

No. 17.


No. 18.

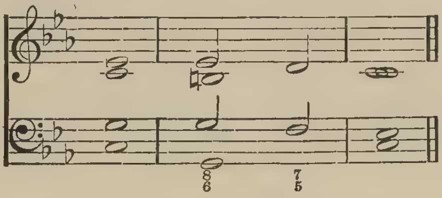

No. 19.

It will be seen that every note of this chord is in the chord as written by Beethoven. This certainly is very exceptional, and in four- or five-part writing only certain selections can be made from the chord. We shall now see what are the best notes to choose out of the same, for four- or five-part writing. In the root position of this chord the notes most commonly taken to accompany it are those which form the dominant seventh of the key, the note on which the thirteenth resolves being left out. The thirteenth may either resolve on the same chord or on a chord having another root. If it resolve on the same chord, the thirteenth may either descend one degree to the fifth, or it may ascend one degree to the seventh, the chord forming, when resolved, simply the dominant seventh, thus—

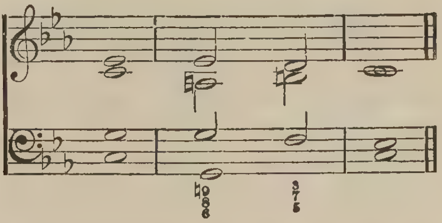




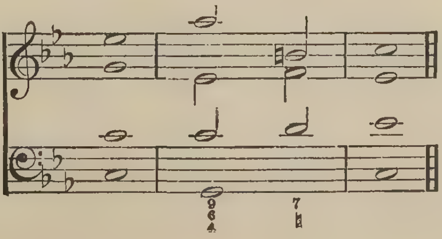
The first of these examples shows the thirteenth resolving on the fifth; the second example shows the thirteenth resolving on the seventh. It is generally figured 6. It will be readily seen that when only the root and third are heard with the thirteenth the chord is simply the first inversion of the mediant; and it is to be considered as a thirteenth, only when followed by a dominant chord or tonic triad. When the seventh is left out, and the thirteenth goes to the fifth, the root should proceed to the seventh at the same time—



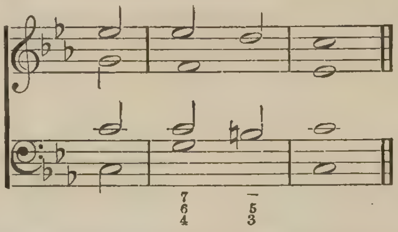
The thirteenth may be accompanied by the root and ninth (either major or minor ninth); and when the thirteenth goes to the fifth, the ninth proceeds to the third, and the root goes to the seventh, thus—



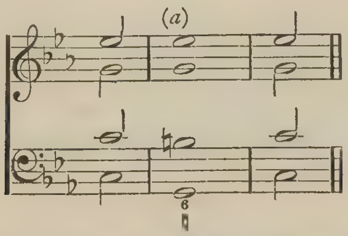
The thirteenth may also be accompanied by the ninth and eleventh; when the thirteenth goes to the seventh, the ninth then proceeds to the third, and the eleventh goes to the fifth, as in the following example:—

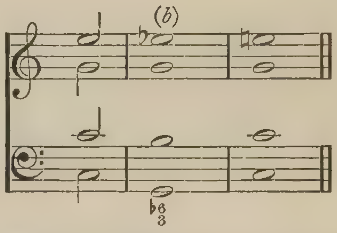


Sometimes the thirteenth is accompanied by the seventh and eleventh, the thirteenth going to the fifth, and the eleventh proceeding to the third, thus—

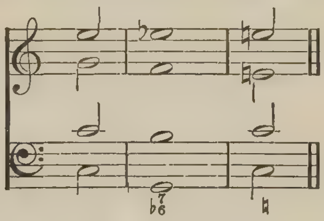


This chord of the thirteenth may also be resolved upon a chord having another root, generally the tonic. In this case the minor thirteenth either remains to be the third of the tonic, if the tonic be minor (*a*); or, if the tonic be major, it rises a chromatic semitone to the third of the tonic, thus (*b*)—

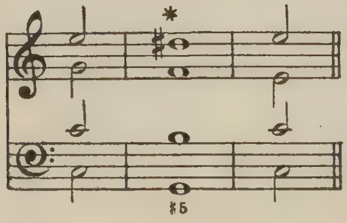




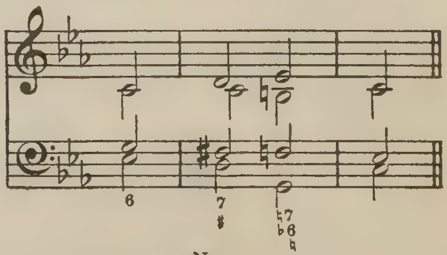
In the first of these cases the thirteenth is accompanied by the root and third, giving it all the appearance of the first inversion of a chord on the mediant. The seventh should not accompany it in this case, as the seventh would proceed by conjunct motion to the note that is being held on, which is not good. When, however, the minor thirteenth rises a chromatic semitone to the third of the tonic major chord, the seventh may accompany it, thus—



In the case just given it is very common to use the false notation, and to write the minor thirteenth as an augmented fifth from the root, as follows (No. 20). Both the resolution of this chord upon the tonic, and the presence of the F♮ show that the root of the chord can only be G, the dominant of C.



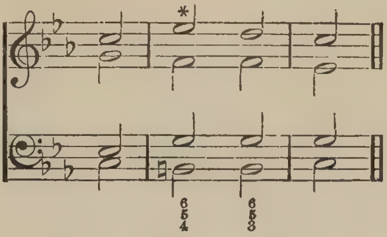
No. 20.



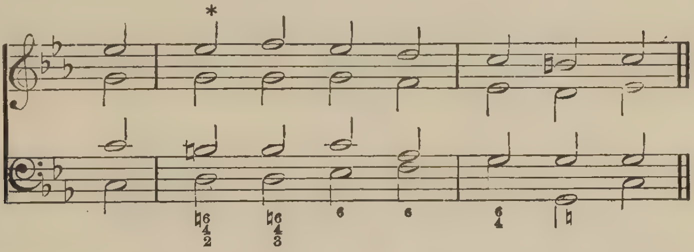
No. 21.

The thirteenth may also leap to the tonic note itself; but the fifth does not usually accompany it when this resolution is taken (No. 21).

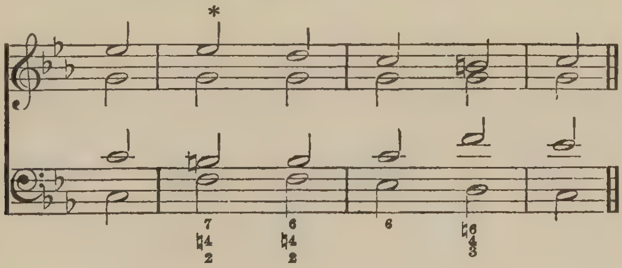
The first inversion of this chord has the third in the bass; the resolution of the thirteenth, when on the same chord, forming a chord of the dominant seventh, the note on which the thirteenth resolves being left out, thus—



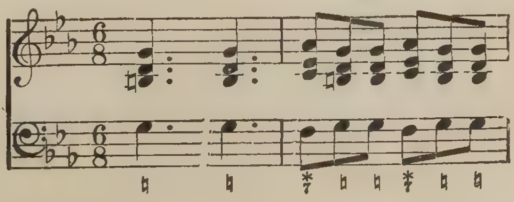
The second inversion has the fifth in the bass, when the thirteenth, accompanied by the root and third, often goes to the seventh, thus—



The third inversion has the seventh in the bass, when the thirteenth, accompanied by the root and third, may be resolved upon the fifth, thus—

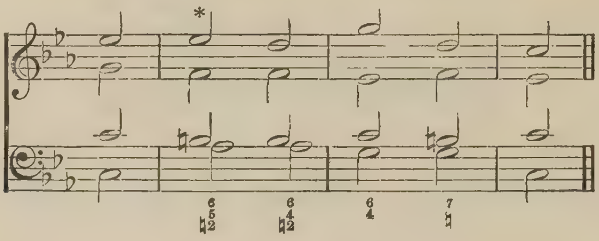


The foregoing inversion of the thirteenth, with the seventh in the bass, may be accompanied with the ninth and eleventh, in which position it is practically the essential seventh on the subdominant. The bass, although the seventh, is here free to rise to the root, while the other three notes descend to the root, third, and fifth of the dominant chord. In this case the thirteenth must be below the ninth; for, if above it, consecutive perfect fifths would result. Weber, in his "Der Freischütz," has a good example of this resolution.

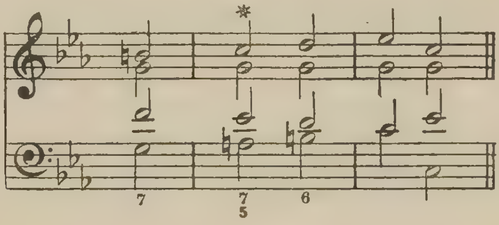


Here the seventh, F in the bass, ascends to the root G ; the minor ninth, A♭ in the treble, descends to the root G ; the thirteenth, E♭ in the alto, descends to the fifth, D ; and the eleventh, C in the tenor, descends to the third, B.

The fourth inversion of the thirteenth has the ninth in the bass, and may be accompanied by the seventh and third.

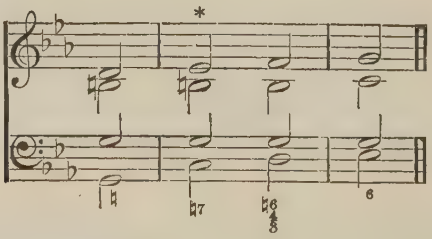


The minor thirteenth may also be accompanied by the major ninth, eleventh, and root. It has then the appearance of a chord of the seventh on the submediant with a diminished fifth. In modern music this may be used both in major and minor keys.



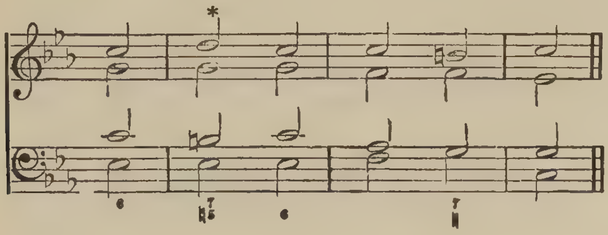
Here the major ninth, A in the bass, ascends to the third, B ; the eleventh, C in the treble, ascends to D, the fifth ; the root, G in the alto, remains, and the minor thirteenth, E♭, descends to the fifth, D.

The fifth inversion of the minor thirteenth has the eleventh in the bass, and may be accompanied by the root and third ; this chord has all the appearance of a chord of the seventh upon the tonic minor of the key. In this case it is advisable to prepare either the B♮ or the C.

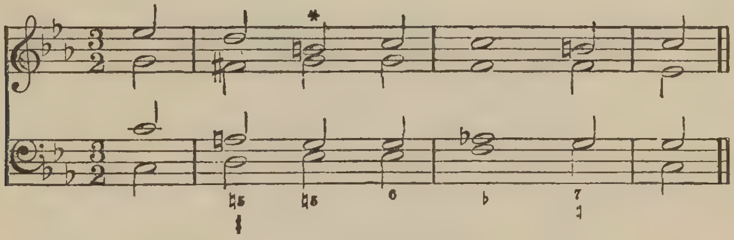


Here the eleventh, C in the bass, ascends to the fifth, D ; the minor thirteenth, E♭ in the treble, ascends to the seventh, F ; the third, B in the alto, remains, and the root, G in the tenor, remains.

The last inversion of the minor thirteenth has the thirteenth in the bass. It may be accompanied by the root third and fifth, or by root and third only. In this latter case it is practically an unprepared chord on the mediant of the key, with augmented fifth.



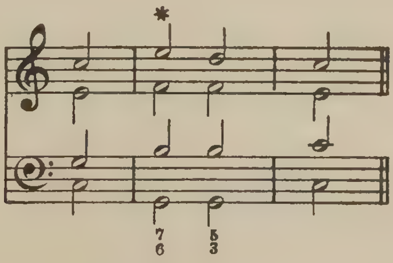
Here the thirteenth, E in the bass, remains to be the first inversion of the tonic; the fifth, D in the treble, descends to the root of the tonic; the root, G in alto, remains to be the fifth of the tonic; and the third, B in the tenor, ascends to the root of the tonic.



In this example only the root and third are used to accompany the thirteenth; the thirteenth; E♭ in the bass, remains to be first inversion of the tonic; the root, G in alto and tenor, remains to be the fifth of the tonic; and the third, B in treble, ascends to the root of the tonic.

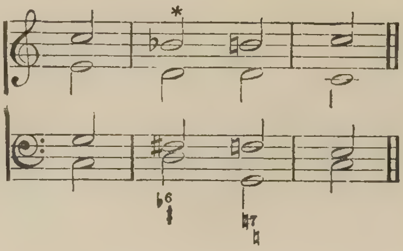
## DOMINANT MAJOR THIRTEENTH.

This chord is treated in precisely the same way as the dominant minor thirteenth, with the exception that it can only be used in the major key.

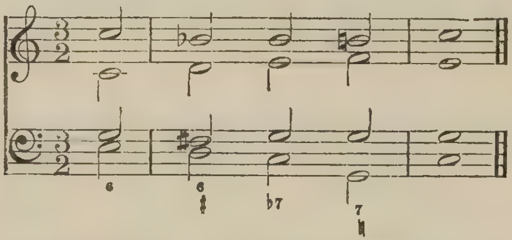


## SUPERTONIC MAJOR AND MINOR THIRTEENTHS.

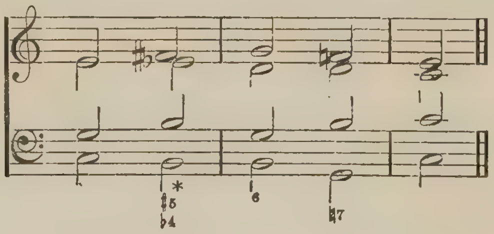
Although not so commonly used on the supertonic as on the dominant, yet the thirteenth can be taken on the supertonic with good effect. When resolved on the dominant, the minor thirteenth rises to third of the dominant.



When resolved on the tonic, the minor thirteenth remains to be the tonic seventh.



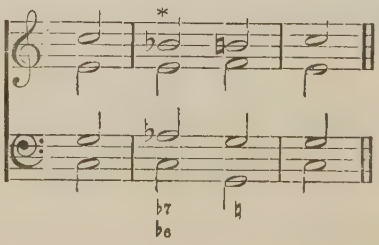
The major supertonic thirteenth is very rare ; the following is an example :—



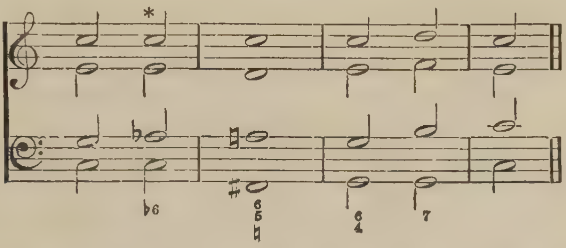
Here the supertonic major thirteenth, B in bass, remains to be the third of the dominant ; the third, F♯, ascends to the root of the dominant ; and the thirteenth, B in the tenor, descends to G, the root of the dominant, and the minor ninth, E♭, descends to D, the fifth of the dominant.

## TONIC MAJOR AND MINOR THIRTEENTHS.

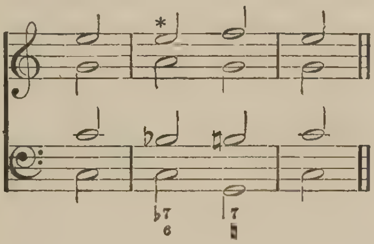
These also are very rare. They may be resolved either on a dominant or a supertonic discord.



In the foregoing example the root of the tonic minor thirteenth, C, is in the bass, and falls to the root of the dominant; the seventh, B♭ in the treble, ascends to B♮, the third of the dominant; the third, E in the alto, ascends to F, the seventh of the dominant; and the minor thirteenth, A♭, descends to G, the root of the dominant. The minor thirteenth, when resolved on a supertonic discord, rises a chromatic semitone to the fifth of the supertonic, thus—



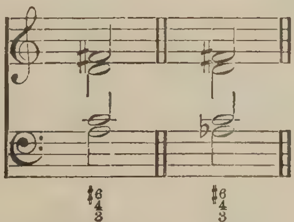
In such an example as the above the minor thirteenth would be often written as an augmented fifth from the root, according to the false notation, that is as G♯ instead of A♭. The major thirteenth can only be used in the major key.



In this example the major thirteenth, A, is in the alto, and descends to G, the root of the dominant; the seventh, B♭, is in the tenor, and ascends to B♮, the third of the dominant; the third, E, is in the treble, and ascends to F, the seventh of the dominant; and the root, C, is in the bass, which falls to the root of the dominant.

## CHORD OF THE AUGMENTED SIXTH.

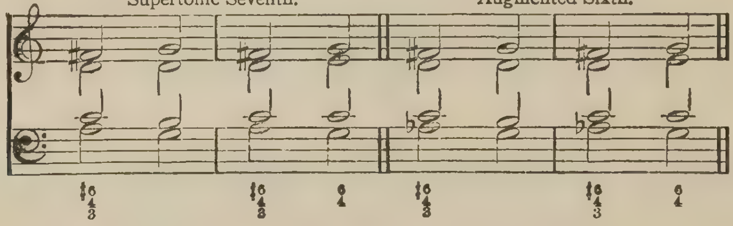
This chord is generally a stumbling-block to young students, and yet it is simply formed from a chord that we now know very well, *viz.*, a chromatic supertonic seventh, or a dominant seventh. If in the key of C we take the chromatic supertonic chord of the seventh, and put it in the second inversion, all we have to do, in order to make it an augmented sixth, is simply to lower the bass note (which is the fifth of the chord), a chromatic semitone, thus—



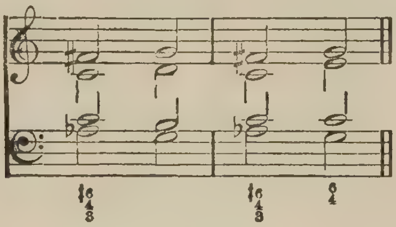
Supertonic Seventh. 2nd Inversion.    Augmented Sixth.

This gives us an augmented sixth on the minor sixth of the key. Most writers consider the lowest note, A♭, as the minor ninth of the dominant, and the other notes as belonging to the supertonic, thus deriving it from two roots, which is practically correct, as A♭ cannot possibly belong to the chromatic supertonic, because A♮ is a characteristic note of that chord. A♭ must, therefore, be the minor ninth of the dominant, while the other notes belong to the supertonic. In all respects, however, this is treated in the same manner as the supertonic chord, the resolutions being precisely the same,—that is, it may resolve either on a dominant root or on the second inversion of the tonic.

Supertonic Seventh. Augmented Sixth.

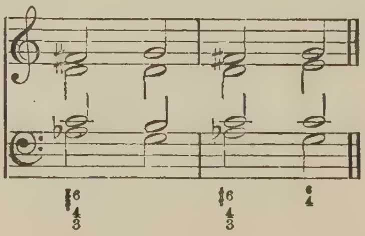


There are three forms in which this chord may be used—first, when the supertonic root is omitted and the supertonic seventh doubled : it is then called the *Italian Sixth.*



Here the supertonic seventh, C, is doubled in alto and tenor, the supertonic seventh, C in the alto, ascending to D, the fifth of the dominant ; and the supertonic seventh, C in the tenor, descending to B, the third of the dominant in the first resolution.

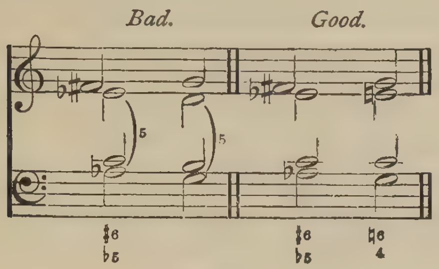
In the second resolution the supertonic seventh, C in the alto, rises to E, the third of the tonic, and the supertonic seventh, C in the tenor, remains to be the root of the tonic. The student will recall from his former study of the chromatic supertonic seventh that the treatment of the seventh in the chromatic supertonic was much more free than the treatment of the seventh on any other chord. The second form of the augmented sixth has both the supertonic root and the seventh present. This is called the *French Sixth.*



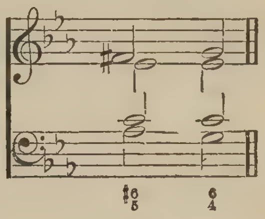
Here, in the first resolution, the supertonic root, D, remains to be the fifth of the dominant; and the supertonic seventh, C, descends to B, the third of the dominant.

In the second resolution the supertonic root, D, ascends to the third of the tonic; and the supertonic seventh, C, remains to be the root of the tonic.

The third form of the augmented sixth has the seventh and the minor ninth of the supertonic present, the supertonic root being omitted. This is called the *German Sixth.* In this case, the resolution is only on the second inversion of the tonic, as the resolution directly on the dominant would produce consecutive fifths (No. 5). In the first resolution the supertonic minor ninth, E♭, proceeds to D, the fifth of dominant, thus making consecutive fifths with the bass.



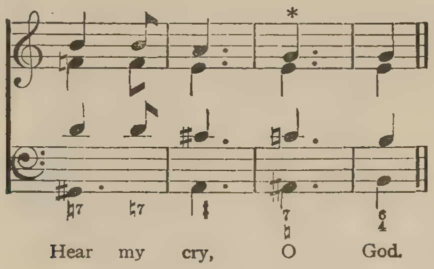
No. 5.



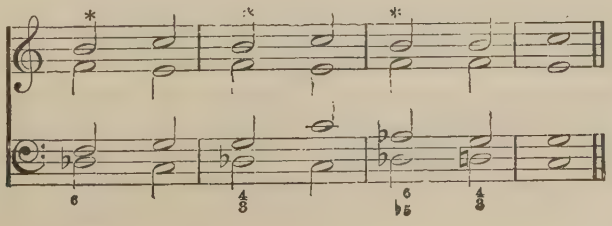
No. 6.

In the second resolution the supertonic minor ninth, E♭, ascends by a chromatic semitone to E♮, the third of the major tonic. In the minor key the supertonic minor ninth, E♭, would remain to be the third of tonic (No. 6).

It is very rarely that the two notes which form the augmented sixth are inverted as a diminished third. There is a very effective use made of the inversion by Mendelssohn, in "Hear my Prayer," fifteen bars before the recitative.



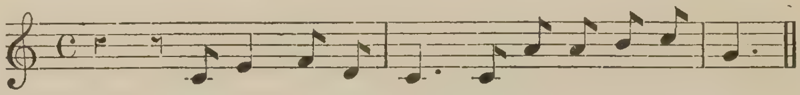
Another effective example will be found in Barnby's popular part-song, "Sweet and Low." As a rule, however, the student should avoid using it except for very special effects. The second inversion of the dominant seventh, with an arbitrarily flattened fifth, may also be used in the same manner as the chromatic supertonic, but it is very much less common. This gives us an augmented sixth on the minor second of the key.



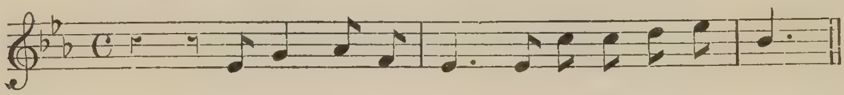
In the minor key it should not resolve on the common chord of the key note. In all other respects it is treated in the same manner as the augmented sixth formed by the chromatic supertonic with flattened fifth. Most writers consider the lowest note, D♭, as the minor ninth of the tonic, and the other notes as belonging to the dominant. The same reasoning which was applied to the augmented sixth, formed from the chromatic supertonic discord, applies in this case also. The D♭ cannot possibly belong to the dominant, because D♮ is a characteristic note of that chord. D♭ must, therefore, be the minor ninth of the chromatic tonic discord, while the other notes of the augmented sixth belong to the dominant.

## TRANSPOSITION.

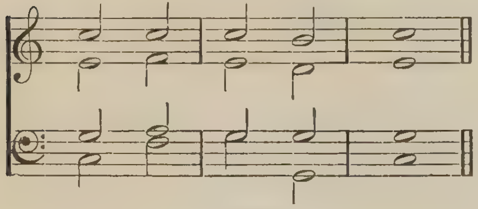
Transposition is simply altering the key or pitch of any particular piece; as, for example, if a vocalist with a low or medium voice wished to sing a song originally written for a high voice, or *vice versâ*, the song would be transposed into a suitable key.



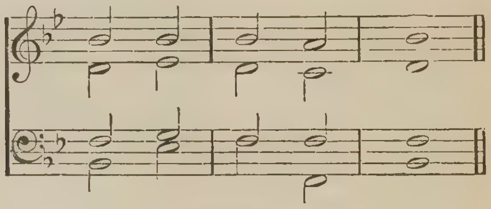
A soprano wishing to sing the previous passage would probably transpose it into the key of E♭ a minor third higher, thus—



Of take the following chords (No. 7); transposition would take place if we wrote them in



No. 7.



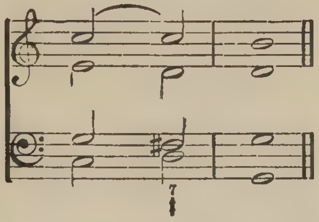
No. 8.

another key (No. 8). This would be a transposition from the key of C into the key of B♭, one whole tone lower.

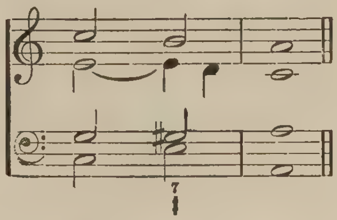
## MODULATION.

Modulation differs from transposition, in so far as it refers to the manner in which the new key is entered rather than to the key itself. Transposition is the placing of the same passage in another mode or key. Modulation is the going into another key in a particular way, whether that key contains the same or other matter than that contained in the original key. One broad rule may be given:—Let us find the dominant of the key into which we wish to enter, and usually introduce that chord before entering the new key. When we wish to modulate to the most nearly related key, such as from any tonic to any subdominant, or to any dominant, or their relative minors, such modulation is called natural modulation. When we modulate to more remote or unrelated keys, such modulations are said to be extraneous modulation. We shall first examine *Natural Modulation*. If we take the key of C major the nearest related keys will be the dominant

G, with one sharp, and the subdominant F, with one flat; with their relative minors, namely, A minor, the relative minor of the tonic C; E minor, the relative minor of the dominant G; and D minor, the relative minor of the subdominant F. Then again, if we take the key of C minor, with three flats, the most nearly related keys will be the dominant minor, G minor with two flats: and the subdominant F minor, with four flats; and their relative majors, namely, E♭ major, the relative major of the tonic C minor; B♭ major, the relative major of the dominant minor G minor; and A♭ major, the relative major of the subdominant F minor. A few examples of simple natural modulation will be interesting. If we wish to modulate from C major to G major, the first thing to be done is to find the dominant of the key to which we are going. This key is G major, and the dominant chord of G major is D, F♯, A, or with the dominant seventh D, F♯, A, C, which always more completely defines the key, thus—

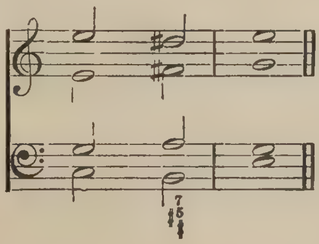


Here D, the dominant of G, directly follows the tonic chord of C; the root of the chord of C in treble remains to be the dominant seventh of the chord of D. But the chord of C here acts in two capacities—it is not only the tonic of C, but it is also the subdominant of G; therefore, while it is *approached* or struck as tonic of C, it is *left* as the subdominant of G. It is good, therefore, to have some chord before the new dominant with this double relation, that is, having a connection with the key it is leaving, as well as with the key to which it is going; and this connection may either exist by *a chord belonging to both keys*, or by having *one or more notes in common with the chord which it is leaving*. Let us modulate from the key of C major to A minor, thus—



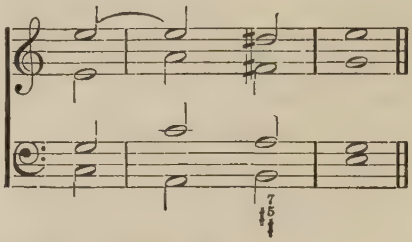
the third of the tonic chord here becomes the root of the dominant of the new key, and forms a connection, although the tonic chord itself is no part of the new key.

In the following modulation from C major to E minor—

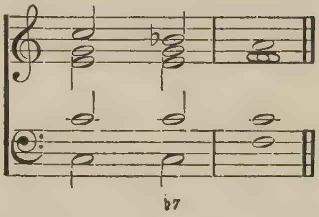


the chord of C is not only the tonic of C, but it is also the subdominant of E minor, thus being connected with both keys, although there is no note in common.

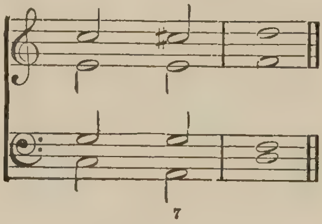
We might have introduced the relative minor of the tonic, which is also the subdominant of new key, between the tonic chord C, and the new dominant B; when the connection would have been both by chords belonging to both keys, and by notes common to both chords, thus—



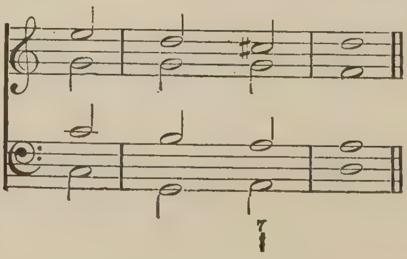
In modulating from C major to F major, thus—



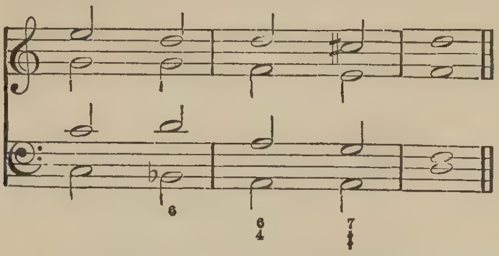
we find that the tonic of C is also the dominant of F, and that, by simply adding B♭, the dominant seventh, it is no longer a tonic but a dominant, proceeding to the new tonic F. A modulation to the supertonic minor of the key might be effected thus—



Here the tonic of C has two notes, in common with the dominant of D minor, namely, the third E and fifth G, which become the fifth and seventh of the dominant A: the root of C, rising chromatically, becomes the third of the dominant of D minor. It is possible but not usual to have the dominants of these keys too near each other, because the dominant of C, being the subdominant of D minor, causes a major chord on the subdominant of that key—

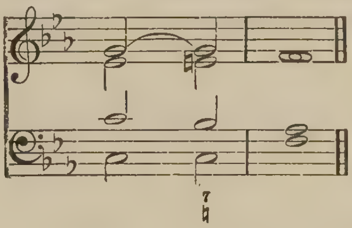


It is better to introduce a chord containing the minor sixth of the new key thus—

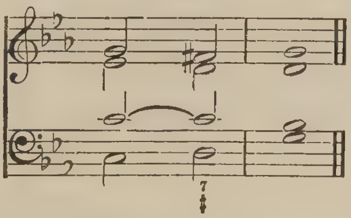


Here the minor sixth, B♭, of the new key, is heard before the dominant is introduced, thus allowing both the characteristic notes of D minor to be prominent.

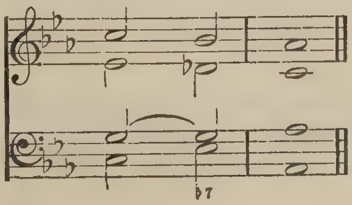
The modulations from a minor key are more frequently made to the attendant relative majors than to the minor keys of dominant and subdominant; and this arises from the fact that there are more chords in common between a minor key and the attendant relative major keys, than between a minor key and its minor dominant or subdominant. The following illustration shows a modulation from a tonic minor to its subdominant minor:—



Here the fifth G of the tonic chord of C remains to be the fifth of the dominant of F minor, and the third, E♭ of the tonic minor chord, rises chromatically to E♮, the third of the dominant of F minor. We shall now modulate from the tonic minor to the dominant minor—

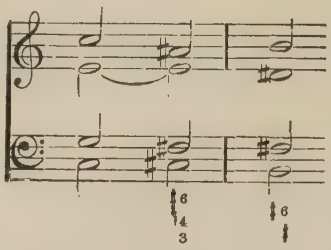


Here the tonic root remains to be the seventh of the dominant of the new key, while the tonic itself is also the subdominant of the new key. The next example is a modulation from the tonic minor to the relative major of the subdominant—

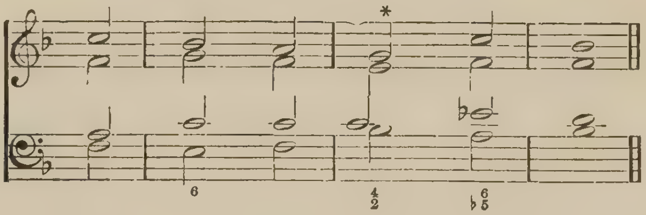


Here the tonic minor is left as the submediant of the new key, the fifth G of the tonic becoming the third of the new dominant.

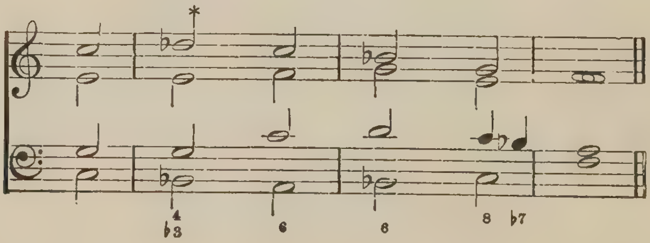
These examples of modulation have all been to closely related keys, but the same principle of having a connecting note between certain chords, can be applied to extraneous modulation. Thus in going from C major to B major—



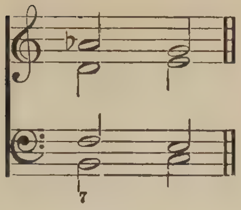
we have the third, E of the tonic, becoming the seventh of the new dominant. These, however, are the very simplest forms of modulation. All the chords that we have studied, chromatic and diatonic, fundamental and essential, can be used for purposes of modulation ; and they open up a field of study that is practically unlimited. For example, the dominant of any key may be taken as the supertonic or tonic of another key, and left accordingly—



Here the last inversion of the dominant seventh of F is left as the supertonic of B♭. In like manner the supertonic may be left as the dominant or tonic of another key, or the tonic of one key may be left as dominant or supertonic of another, and these chords may be either chords of the seventh, ninth, eleventh, thirteenth, or any of their inversions. The following is an example of the third inversion of the tonic minor ninth without the root, left as a dominant :—

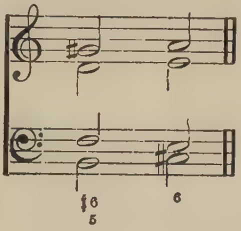


Here the third inversion of the tonic minor ninth on C, being without the root, makes a second inversion of the diminished seventh on E ; it is then left as the dominant of F, and proceeds to that tonic. The use of enharmonic changes opens to us another wide field of modulation. Take one example—

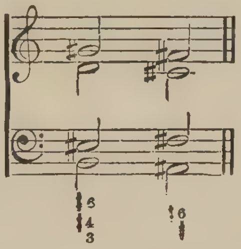


Here is the first inversion of the minor ninth of G (the dominant of C) without the root, which is the diminished seventh on B. It proceeds to the tonic C.

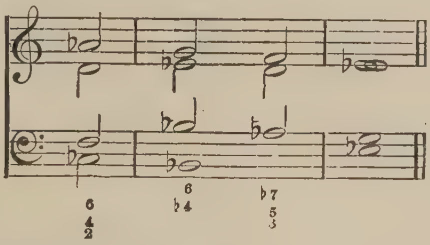
If we enharmonically alter the A♭ to G♯ thus—



it becomes the second inversion of the minor ninth of E, the dominant of A without the root, which is the first inversion of the diminished seventh on G♯ proceeding to the tonic A. Again, if we enharmonically alter the F to E♯, thus—

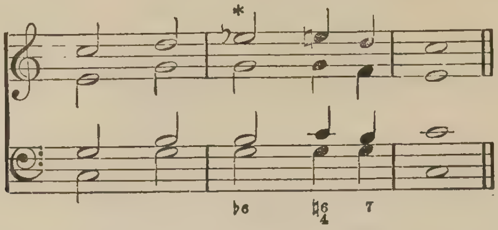


it now becomes the third inversion of the minor ninth of C♯, the dominant of F♯, which is the second inversion of the diminished seventh on E♯, proceeding to the tonic F♯. Lastly, if we go back to the first example and change the B into C♭, we have the fourth or last inversion of the minor ninth of B♭ (the dominant of E♭) without the root, which is the third or last inversion of the diminished seventh on D proceeding to the tonic E♭—

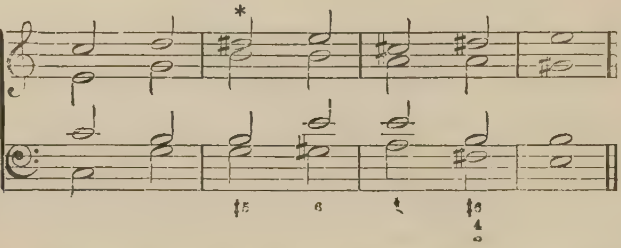


If we now consider that each of these may act either as a tonic, a dominant, or a supertonic, and may proceed either to major or minor tonics, we find that there are twenty-four keys to which that one chord may lead us.

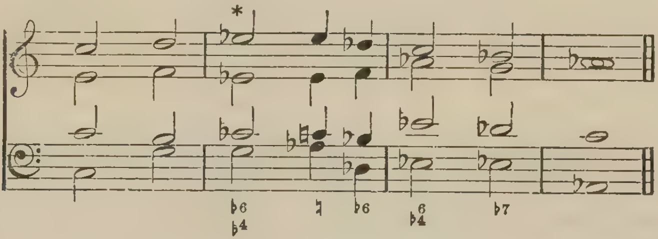
The enharmonic change of the minor thirteenth gives us also a series of modulations—



In the foregoing we have the minor thirteenth of G, the dominant of C, consisting of root third, and thirteenth, resolving on second inversion of tonic C. The next illustration shows the same chord by enharmonic alteration, E♭ changed to D♯, proceeding as dominant to the key of E—



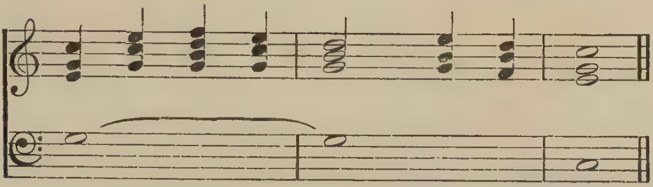
The example just quoted gives us the last inversion of the minor thirteenth of B (the dominant of E), with the thirteenth in the bass, the root in tenor and alto, and the third in the treble. It resolves on the first inversion of the new tonic. By another enharmonic change it becomes the dominant of the key of A♭ thus—



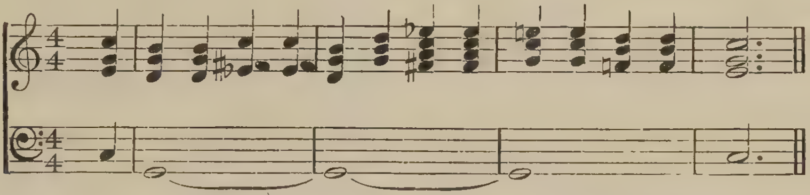
Here is the first inversion of the minor thirteenth of E♭ (the dominant of A♭): the third is in the bass, the thirteenth in the tenor, and the root in treble and alto. This chord resolves upon the root of the new tonic. This chord may also act as a supertonic or a tonic, which would give us a modulation into eighteen different keys, nine major and nine minor. To deal fully with modulation would require more than a volume for that subject alone; enough has been said to show the student the varied means by which it can be accomplished; other ways and means he may be left to work out himself.

## PEDALS.

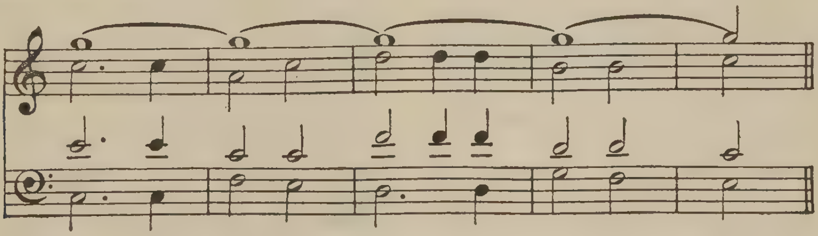
What is called a pedal note is a note held on for several bars, generally, though not always, in the bass, while over it is sounded a succession of harmonies, of which the pedal note may or may not form a part. The name is evidently derived from the pedals of the organ, as it is called in France and Germany, *organ-point*. The note used for a pedal is usually either the dominant or the tonic; the dominant is most frequently used. The tonic is generally to be found either at the end or the beginning of a movement. Sometimes both are met with, the dominant pedal coming first, and then the tonic pedal. A long holding note is not called a pedal when only chords of which it forms a part are used; thus the following example is not a pedal :—



These may be used, but along with them must be used more severe discords, such as any of the chromatic discords belonging to the key, of which the pedal note forms no part. Thus the following example is a pedal :—



Here the chromatic supertonic seventh and ninth are used, of which chord the pedal note forms no part; the pedal note is not acting here as the supertonic eleventh, because the third and fifth are both present, *both* of which cannot be present at the same time as the eleventh. The G in this case is simply a pedal note, and when this is the case, the part next above the pedal must be considered the real bass, and be subject to all the rules that regulate the movement of the bass. The only modulation allowed on a pedal by the old masters was to some nearly related key; but modern composers have not fettered themselves by any such rules, and almost any modulation may now be found on a pedal. Another rule which is practically discarded in modern writing, is that a pedal note should be quitted only when it is an essential part of the harmony. This, however, is a rule which the reader is strongly recommended to follow while in the student stage. In some cases both tonic and dominant will be found sustained at the same time, and even a triple pedal, consisting of tonic, dominant, and supertonic, will sometimes be found. An inverted pedal is where the pedal is sustained in the top part, or in an inner part instead of in the bass—



It is impossible to explain in a written treatise the various difficulties that meet a student, with the same clearness that is possible by oral instruction; but I have endeavoured, to the best of my ability, not to propound any new theory, but to clear up for others some of the puzzles which beset me in the course of my own studies; and I must acknowledge my indebtedness to the works of Prout, Macfarren, Stainer, Pearce, and others.

## CHAPTER V

# BIOGRAPHICAL DICTIONARY OF MUSICIANS

**Abt, Franz** (1819–1885). A native of Eilenburg, in Germany. A prolific writer of songs and part-songs.

**Adam, Charles Adolphe** (1803–1856). French operatic composer.

**Albani-Gye, Marie Emma** (*née* Lajeunesse). Distinguished and popular soprano. Born at Chambly, near Montreal, in 1851.

**Albeniz, Isaac.** Born at Camprodon (Gerona), May 29, 1860; died at Campo-les-Bains, June 16, 1909. Spanish pianist and composer. Usually regarded as the founder of the modern Spanish school of composition.

**d'Albert, Eugen** (Eugène Francis Charles). Pianist and composer. Born at Glasgow, April 10, 1864. Son of the well-known dance composer, Charles d'Albert. Spent most of his adult life in Germany. Died, March 1932.

**Albrechtsberger, Johann Georg** (1736–1809). Organist, composer, and theorist. Born at Klosterneuburg, near Vienna.

**Alcock, Walter Galpin.** Organist and composer. Born at Edenbridge, Kent, December 29, 1861. Was assistant to Sir Frederick Bridge at Westminster Abbey for many years. Appointed to Salisbury Cathedral in 1917. Knighted in 1933.

**Allegri, Gregorio** (1560–1652). A Roman composer: disciple of Palestrina. Wrote the celebrated "Miserere," for two choirs of nine voices, sung in the Sixtine Chapel, and which the youthful Mozart wrote out from memory, it being forbidden to furnish strangers with a copy of this work.

**Allen, Hugh Percy.** Born at Reading, December 23, 1869. After holding post of organist at several cathedrals became organist at New College, Oxford. Conducted the Bach Choir from 1901–1920. Succeeded Sir Hubert Parry as Director of Royal College of Music in 1918, and was knighted in 1920.

**Allin, Norman.** English bass. Born at Ashton-under-Lyne, Lancs, October 19, 1885. One of the founders of the British National Opera Company.

**Amati.** A family of noted violin-makers at Cremona, sixteenth and seventeenth centuries.

**Arensky, Antony Stepanovitch.** Born at Novgorod, July 30, 1861, died at Teroiki, Finland, February 26, 1906. Though a prolific composer, his fame now rests on a few of his lesser works.

**Arne, Dr. Thomas Augustine** (1710–1778). Wrote about thirty operas, two oratorios, and many glees, catches, and songs. Composer of "Rule Britannia."

**Ashton, Algernon Bennet Langton.** Born at Durham, December 9, 1859. Pianist and teacher, and a composer of many scholarly works, chiefly instrumental.

**Atkins, Ivor Algernon.** Born at Cardiff, November 29, 1869. Organist of Worcester Cathedral since 1897. Knighted in 1921.

**Attwood, Thomas** (1765–1838). Chorister, Chapel Royal. Sent by the Prince of Wales (afterwards George IV.) to study in Italy. Afterwards went to Vienna, where he worked under Mozart. In 1795 appointed organist of St. Paul's Cathedral, and of the Chapel Royal in 1836. Compositions include Church-music, songs, glees, &c.

**Auber, Daniel François Esprit** (1784–1871). Born at Caen in Normandy. Studied under Cherubini. Wrote a great number of operas —"Masaniello," "Le Maçon," "Fra Diavolo," "Zanetta," and many others.

**Audran, Edmond** (1842–1901). A celebrated French composer, who gained an enormous success with his "La Poupée," and other works for the lighter stage.

**Austin, Ernest.** Born in London, December 31, 1874. A prolific and successful composer, especially of works for pianoforte-teaching purposes.

**Austin, Frederic.** Born in London, March 30, 1872. Operatic singer (baritone); and, later, successful conductor, composer, and arranger —" Beggars' Opera," " Polly," &c.

**Bach, Johann Sebastian.** Born at Eisenach, March 21, 1685; died at Leipzig, July 28, 1750. The most famous member of an illustrious musical family, and one of the greatest composers of all time. Schumann's dictum best sums up his position: " Music owes to Bach almost as much as Christianity owes its Founder." His music forms an indispensable part of the repertory of organist, pianist, violinist, violoncellist, flautist, and choralist; and his suites for orchestra are hardly less firmly established in the concert-room than the symphonies of Beethoven. So vast was his output, that, as has been well said, future generations may hold it to be the work of a group of composers rather than of an individual.

**Bach, Carl Philipp Emanuel** (1714–1788). Born at Weimar. Third son of Johann Sebastian Bach. Musical director at Hamburg, 1767. His compositions mark the transition from his father's style to that of Haydn and Mozart. Has been called the father of modern pianoforte playing and of the sonata.

**Bainton, Edgar Leslie.** Born in London, February 14, 1880. Composer and conductor. Principal, Newcastle-on-Tyne Conservatoire of Music. Appointed in 1934 Principal of N.S.W. State Conservatorium and conductor of State Orchestra, Adelaide.

**Bairstow, Edward Cuthbert.** Born at Huddersfield, August 22, 1874. Organist, conductor, and composer. Appointed to York Minster in 1913. Knighted in 1932.

**Balakireff, Mily A.** Russian composer. Born 1836; died 1910. Founder of the school of musicians who endeavoured to compass in their works an entire expression of the natural genius of their race—to create a " national Russian art."

**Balfe, Michael William** (1808–1870). Born at Dublin. Engaged by Rossini as first baritone at the Italian Opera in Paris (1828). In 1835 produced his first English opera, " The Siege of Rochelle." " The Bohemian Girl " is still a popular favourite.

**Bantock, Granville.** Born in London, August 7, 1868. Conductor and composer. Appointed Principal, Birmingham and Midland Institute School of Music, in 1900. Knighted in 1930.

**Barker, Charles S.** (1806–1879). English organ-builder; noted as the inventor of the pneumatic lever.

**Barnby, Sir Joseph.** Organist, composer, and conductor. Born at York in 1838. A choir-boy in the Minster there, and afterwards a student at the Royal Academy of Music. Held various posts as organist in London. Conducted Royal Choral Society for many years. Precentor at Eton, 1875–1892. Principal of Guildhall School of Music, 1892–1896. Died 1896.

**Bartók, Béla.** Hungarian composer and pianist. Born at Nagyszentmiklós, Hungary, March 25, 1881. Is an enthusiastic folk-song collector.

**Batiste, A. Edouard** (1820–1876). Distinguished French organist, who composed many popular works for his instrument.

**Battistini, Mattia.** Italian baritone operatic and concert singer. Born in Rome, February 27, 1858. Retained his vocal powers practically unimpaired for an unusual length of time, and toured as a concert singer very successfully when near his seventieth year. Died, 1928.

**Bauer, Harold.** Pianist. Born at New Malden, April 28, 1873. Founder and President of the Beethoven Association in New York, where he has long been settled.

**Bax, Arnold Edward Trevor.** Born in London, November 6, 1883. Distinguished composer of chamber and orchestral music. Five symphonies, &c.

**Beecham, Thomas.** Born near Liverpool, April 29, 1879. One of the most brilliant of modern conductors, operatic and orchestral. He was knighted in 1914.

**Beethoven, Ludwig van** (1770–1827). Born at Bonn. Distinguished himself first as a pianist. Made various concert-tours (1781–96). Although a number of his youthful compositions had already been published, it was not until his twenty-fifth year (1795) that Beethoven produced anything to which he appears to have thought it worth while to attach an opus number. To this year belong the three pianoforte trios known as Op. 1, and also the three pianoforte sonatas (Op. 2), dedicated to Haydn. From 1795 dates the first beginning of Beethoven's influence on musical art, an influence the extent of which it is impossible to set down in words. Of works bearing a separate opus number, Beethoven has left 138, including 9 symphonies, 7 concertos, 1 septet, 2 sextets, 3 quintets, 16 quartets, 36 pianoforte sonatas, 16 other sonatas, 8 pianoforte trios, 1 opera, 2 masses, &c.

**Bellini, Vincenzo** (1801–1835). Born at Catania, in Sicily. Composed " Il Pirata," " Somnambula," " Norma," " I Puritani," and many other operas.

**Benedict, Sir Julius** (1804–1885). Born at Stuttgart. A pupil of Hummel and Weber. From 1835 lived in London. Held various posts as conductor.

**Bennett, Sir William Sterndale** (1816–1875). Born at Sheffield. At eight years of age became chorister at King's College Chapel, Cambridge; two years later was sent to the Royal Academy of Music, where, at the age of sixteen, 1832, he performed a pianoforte concerto of his own, and was commended by Mendelssohn, who was present. In 1856 he was appointed Professor of Music at Cambridge, and conductor of the Philharmonic, London; and in 1866 he became Principal of the Royal Academy.

**Berger, Francesco.** Pianist and composer. Born in London, in 1835; died, April 25, 1933. In 1932 published a book of reminisences entitled "97"—his age at the time.

**Beringer, Oscar.** Pianist and composer. Born in 1844, at Furtwangen, Baden. Spent most of his life in London, where he died in 1922.

**Beriot, Charles Auguste de** (1802–1870). Born at Louvain. One of the great violinists of the last generation.

**Berlioz, Hector** (1803–1869). Born at Côte St. André, in the department of Isère. Intended by his father, a doctor, for the medical profession, and with this object sent to Paris in 1822. Arrived in Paris, however, Berlioz, sickened with the first experience of the medical schools, preferred to follow out his own inclinations, which lay in the direction of music. As a composer, Berlioz belongs to the advanced Romantic school. Among his best compositions are the orchestral works, "Symphonie Fantastique," "Harold," "Roméo et Juliette," the great dramatic legend "Faust," the operas, "Benvenuto Cellini" and "Les Troyens"; the immense "Requiem," and a number of lesser compositions of all kinds.

**Bertini, Henri Jerome** (1798–1876). Born in London; died at Meylan. Pianist and composer.

**Best, William Thomas** (1826–1897). The foremost English organist of the last half of the nineteenth century, and one of the greatest in the history of the art.

**Bishop, John** (1817–1890). Organist. Born at Cheltenham. He translated a number of foreign musical works into English, among others, Spohr's "Violin School," and Czerny's "School of Composition."

**Bishop, Sir Henry Rowley** (1786–1855). Born in London. A long succession of highly successful dramatic compositions, overtures, and songs gradually brought him to the front as one of the most deservedly popular composers of his day. He received the freedom of the City of Dublin in 1820; was elected Reid Professor of Music in Edinburgh University in 1841; was knighted in 1842; and became Professor of Music at Oxford in 1848.

**Bizet, Georges** (1838–1875). Born and died in Paris. A pupil of Halévy. Wrote a number of operas—"Docteur Miracle," "Les Pecheurs des Perles," "La Jolie Fille de Perth," "Numa," "Djamileh," and the immensely popular "Carmen."

**Bliss, Arthur.** Born at Barnes, August 2, 1891. A prominent composer. Chief works: "Colour" symphony, choral symphony entitled "Morning Heroes," "A Pastoral" for chorus and small orchestra, chamber music, songs, &c.

**Bloch, Ernest.** Composer. Born at Geneva, July 24, 1880. Settled in New York in 1917; in 1920 was appointed head of the Cleveland Institute of Music.

**Blow, Dr. John** (1648–1708). Composer and organist. Westminster. Chorister, Chapel Royal, 1660; Organist, Westminster Abbey, 1669; retired in favour of Purcell, 1680.

**Boccherini, Luigi** (1743–1805). Born at Lucca; died at Madrid. Violoncellist and prolific composer.

**Boëllmann, Léon.** Organist and composer. Born in Alsace, September 29, 1862; died in Paris, October 11, 1897.

**Boieldieu, François Adrien** (1775–1834). Born at Rouen. Wrote a number of successful operas—"Zoraïme et Zulnare," "Calife de Bagdad," "Jean de Paris," "La Dame Blanche," and others.

**Boito, Arrigo.** Born at Padua in 1842; died, 1918. Librettist and opera composer.

**Bonnet, Joseph Élie Georges Marie.** Organist and composer. Born at Bordeaux, March 17, 1884. Appointed to St. Eustache, Paris, in 1906.

**Bononcini, Giovanni Battista** (1672–1750). Celebrated as an opera composer in his time. Was a rival of Handel in London.

**Borodin, Alexander** (1834–1887). Composer. One of the leaders of the "nationalist" Russian school.

**Borwick, Leonard.** Born at Walthamstow, February 26, 1868; died, September 17, 1925. One of the most distinguished of English pianists.

**Bossi, Marco Enrico.** Italian organist and composer. Born at Salo (Lake Garda), April

25, 1861; died at sea in 1925, when returning from a tour in America.

**Bottesini, Giovanni** (1822–1889). Born at Crema, in Lombardy. Studied at Milan. Made many concert-tours as a virtuoso on the double-bass.

**Boughton, Rutland.** Born at Aylesbury, January 23, 1878. Conductor, composer, and author of books on music. Many works, chiefly for stage—"Immortal Hour," "Alkestis," "Bethlehem," &c. Founded Glastonbury Music-Drama Festival in 1914.

**Boult, Adrian Cedric.** Born at Chester, April 8, 1889. Distinguished conductor and teacher. Pupil of Nikisch. Appointed Musical Director of B.B.C. in 1930.

**Bowen, York.** Born in London, February 22, 1884. English pianist and composer.

**Boyce, Dr. William** (1710–1779). Born in London. Son of a cabinetmaker. Choir-boy at St. Paul's. Was made composer to the Chapel Royal in 1738. He is best known to musicians as the editor of the very valuable collection of "Cathedral Music," projected by Greene and completed by himself, and to the public at large as the composer of "Heart of Oak." Composed church music, some of which is still in the repertory.

**Braham, John** (1774–1856). Tenor singer. Born and died in London.

**Brahms, Johannes** (1833–1897). Attracted a good deal of attention as a boy by his compositions and piano-playing. Settled in Vienna in 1869. Brahms' compositions cover a wide range of art, and with the exception of opera, there is scarcely a department of musical art in which he has not made his influence felt. Powerful, original, and versatile, Brahms ranges from the slightest to the grandest in his choice of "form," and in sentiment he is just as catholic, passing from the austere grandeur of the "Requiem," or the "Song of Destiny," to the delicate charm of many of his lesser compositions, songs, &c. Brahms' predominant characteristics are great and even daring originality, coupled, in the works of his maturity, with a rigid artistic reserve.

**Brewer, Alfred Herbert.** Organist and composer. Appointed Gloucester Cathedral in 1897. Knighted in 1926. Died, March 1, 1928.

**Bridge, Frank.** Born at Brighton, February 26, 1879. Distinguished alike as viola player, conductor and composer of much orchestral and chamber music.

**Bridge, Sir John Frederick.** Organist and composer. Born at Oldbury, in 1844. Died in London, March 18, 1924. Organist of Westminster Abbey 1882–1918; Gresham Professor; conductor, Royal Choral Society; &c.

**Bridge, Dr. Joseph Cox.** A younger brother of the preceding, and, like him, a distinguished English musician of his day. Born at Rochester in 1853. Organist of Chester Cathedral from 1877 to 1925. Professor of Music, Durham University. Died, March 29, 1929.

**Britton, Thomas** (1651–1714). Born at Higham Ferrers; died in London. A remarkable musical enthusiast, who, from the nature of his calling, was commonly known as the "musical small coal man." Established weekly concerts over his shop.

**Bruch, Max.** Born at Cologne in 1838. Composer. Died, 1920.

**Bruneau, Alfred.** Composer. Born in Paris in 1857. Has written an "Ouverture Héroïque"; symphonic poems, "La Belle au bois dormant," "Léda," and "Penthésilée"; the operas, "Kerim," "Le Rêve," and "L'Attaque du Moulin," &c.

**Buck, Percy Carter.** Born at West Ham, 1871. Distinguished musical educationist. Appointed Musical Director at Harrow School in 1901; Professor of Music, King's College, London, 1926.

**Bull, Dr. John** (1563–1628). Born in Somersetshire; died at Antwerp. One of the great English musicians of the Elizabethan period.

**Bull, Ole Borneman** (1810–1880). Violinist. Born at Bergen. Bull made many concert-tours as a violin *virtuoso*, his somewhat sensational playing attracting great attention in Europe and America. Ole Bull died in his native place.

**Bülow, Hans Guido von** (1830–1895). Pianist and composer. A pupil of Liszt. One of the great pianists of the century. Bülow was also a distinguished conductor.

**Burney, Dr. Charles** (1726–1814). Historian, organist, and composer. Born at Shrewsbury. Studied music under Dr. Arne. Was for nine years organist of Lynn Regis in Norfolk. Afterwards made several extensive tours on the Continent in search of materials for his "History of Music," the first volume of which appeared in 1776.

**Busby, Dr. Thomas** (1755–1838). Composer and organist. Born and died in Westminster. Dr. Busby wrote several works dealing with musical subjects, the most important of them being a "History of Music," based upon the larger works of Burney and Hawkins.

**Busoni, Ferruccio Benvenuto.** Italian pianist and composer. Born at Empoli, near Florence, April 1, 1866; died in July 1924, at Berlin. One of the greatest of pianists, and a scholarly composer, editor, and arranger.

**Butt, Clara.** Contralto vocalist. Born in 1873. Married Mr. Kennerley-Rumford, baritone vocalist.

**Butterworth, George Kaye.** Born in London, 1885. A composer of unusual promise, whose career was cut short by the Great War; he fell in the Somme battle on August 5, 1915.

**Buxtehude, Dietrich** (1637–1707). Organist and composer. Born at Helsingör; died at Lübeck. Exercised considerable influence on Bach, who walked over 200 miles to hear him play.

**Byrd, William** (1538–1623). Composer and organist. Born at Lincoln. One of the greatest of English composers. Only in recent years has the extent of his work as composer of madrigals, church music, and music for the virginals been realised.

**Callcott, Dr. John Wall** (1766–1821). Composer and organist. The son of a bricklayer. Born at Kensington; died at Bristol.

**Carissimi, Giacomo** (1604–1674). Composer. Born and died in Rome. One of the earliest writers of oratorio.

**Caruso, Enrico.** One of the most famous of operatic tenors. Born at Naples, 1873; died, Naples, 1921.

**Casals, Pablo.** Born at Vendrell (Catalonia), December 30, 1876. One of the finest of violoncellists, he is also a pianist, composer, and conductor.

**Casella, Alfredo.** Pianist and composer. Born at Turin, July 25, 1883. One of the leaders of the new Italian school of composition. Also a distinguished critic and writer.

**Castelnuovo-Tedesco, Mario.** Italian composer. Born at Florence, April 3, 1895.

**Catterall, Arthur.** English violinist. Born at Preston, Lancashire. Founder of String Quartet bearing his name.

**Chabrier, Alexis Emmanuel.** French composer. Born at Ambert, January 18, 1841; died in Paris, September 13, 1894. Best known to-day by his brilliant orchestral rhapsody, "España."

**Chaliapin, Feodor Ivanovitch.** Famous Russian operatic bass. Born at Kazan-on-the-Volga, February 15, 1873.

**Chaminade, Cecile.** Composer and pianist. Has written a quantity of clever and graceful chamber-music. Born in Paris in 1861.

**Chappell, William** (1809–1888). Wrote a "History of Music" extending from the earliest records to the fall of the Roman Empire; also "History of the Popular Music of the Olden Times." Born and died in London.

**Charpentier, Gustave.** French composer. Born at Dieuze (Lorraine), June 25, 1860. His opera "Louise" has been one of the most popular of modern works for the stage.

**Cherubini, Maria Luigi.** Born at Florence in 1760, and died in Paris in 1842. After receiving lessons from his father, was placed under the care of the celebrated Giuseppe Sarti, whose pupil he remained for four years. In 1733, when he was only thirteen, Cherubini wrote a successful Mass, and his first opera, "Quinto Fabio," was produced at Milan in 1780. In 1788 Cherubini settled in Paris, where he formed a great reputation as a composer of operas and Church music. From 1821 to 1841 he was head of the Paris Conservatoire.

**Chopin, Francois Frédéric** (1810–1849). Born near Warsaw. Made his first important public appearance in Vienna in 1829, where the delicate charm and expression of his playing excited great public attention. From 1831 until his death Chopin lived in Paris. Himself of French extraction, his works betray the combined influences of the Slavonic spirit and the French.

**Chrysander, Friedrich.** Born in 1826 at Lübtheen in Mecklenburg. A distinguished writer on musical subjects. His most important work is his monumental biography of Handel. Died Bergedorf, September 3, 1901.

**Cimarosa, Domenico** (1749–1801). Born at Naples. A pupil of Piccini. Wrote an immense number of highly successful operas, which rapidly gained for him a European reputation.

**Clark, Jeremiah** (1670?–1707). English composer; remembered chiefly for the tune "St. Magnus."

**Clarke, Rebecca.** English viola-player and composer. Born at Harrow, August 27, 1886.

**Clementi, Muzio** (1752–1832). Born in Rome. In 1817 produced his celebrated book of studies for the pianoforte—"Gradus ad Parnassum." His compositions display great lucidity of construction and elegant precision, but they show very few traces of originality. They are, however, very valuable as educational works, and it is only in this capacity that Clementi's works can be said to survive.

**Cliffe, Frederic.** English pianist and composer. Born at Lowmoor, Bradford, Yorks, May 2, 1857. Died, November 19, 1931.

**Clifford, Julian.** English composer, conductor, and pianist. Born in London, September 28, 1877; died at Hastings, December 27, 1921. His son, Julian, is also well known as a conductor.

**Coates, Albert.** English conductor. Born in Petrograd, 1882, his parents being English. Has conducted much on the Continent and in America.

**Coates, John.** English tenor. Born near Bradford, Yorks, June 29, 1865. Equally distinguished in opera, concert, and recital.

**Coleridge-Taylor, Samuel.** English composer. Born at Holborn, London, August 15, 1875; died at Croydon, September 1, 1912. Was of negro extraction, and an ardent champion of the coloured race. A prolific writer in many fields, he was most successful in the short choral form—*e.g.* the " Hiawatha " trilogy and " A Tale of Old Japan," which have enjoyed a phenomenal vogue.

**Colonne, Édouard.** Composer, conductor, and violinist. Born at Bordeaux, July 23, 1838. One of the principal French conductors of his time. Died, Paris, March 28, 1910.

**Concone, Giuseppe** (1810–1861). Composer and organist. Born and died at Turin. Remembered principally for his educational works in connection with singing.

**Cooke, Dr. Benjamin** (1734–1793). Composer and organist. A celebrated glee-writer. Born and died in London.

**Cooke, Henry.** Composer and vocalist. " Master of the Children " in the Chapel Royal, *temp.* Charles II. Born in Westminster (year uncertain), where he died in 1672.

**Corder, Frederick.** A distinguished English composer, teacher, and writer. Born in London in 1852. Died, August, 1932.

**Corelli, Arcangelo** (1653–1713). The father of modern violin-playing. Born at Fusignano. Travelled in Germany, 1680–1685, where his musical acquirements gained for him the favour of many of the German princes and nobles, in particular that of the Elector of Bavaria, in whose service he remained for some time. Corelli wrote a quantity of chamber-music, his works for the violin being of great excellence.

**Cornelius, Peter.** German composer and poet. Born at Mayence, December 24, 1824; died there October 26, 1874. His operas, " The Barber of Bagdad " and " The Cid," are rarely heard to-day, but his smaller works, *e.g.*, the Christmas songs and his choruses for male voices are highly esteemed.

**Cortot, Alfred.** Distinguished French pianist. Born at Nyon, (Switzerland). In 1905 he became associated with Pablo Casals and Jacques Thibaud, the result being a trio whose performances have probably had no rival. Cortot has also been successful as operatic and orchestral conductor.

**Costa, Sir Michael** (1810–1884). Composer and conductor. Born at Naples. From 1830 to 1846 was conductor at the King's Theatre, London, where he established his reputation as a conductor. In 1846 he was appointed conductor of the Philharmonic Society and the Italian Opera.

**Couperin, François** (1668–1733). Composer, organist, and clavecinist. Born and died in Paris. As a composer of exquisitely constructed little pieces for the clavecin and harpsichord, he may be reckoned one of the early fathers of modern pianoforte music.

**Coussemaker, Charles Edmond** (1805–1876). Writer and composer. Born at Bailleul; died at Lille. An authority on the music and musicians of the Middle Ages.

**Coward, Henry** Choral trainer and conductor. Born at Liverpool, November 26, 1849. His brilliant success with the Sheffield Festival Choir, and subsequently with other Northern choral bodies, had a profound effect on English choralism generally. His methods have been summarised in his " Choral Technique and Interpretation " (Novello). He was knighted in 1926.

**Cowen, Sir Frederick Hymen,** composer and conductor. Born in 1852 at Kingston in Jamaica. An infant prodigy—composed a waltz at six years of age, and when eight wrote an operetta, entitled " Garibaldi." Until 1865 a pupil of Benedict and Goss. Thereafter went to Leipzig, where he studied under Hauptmann, Moscheles, and Reinecke. Has written operas; an oratorio, " The Veil "; cantatas, " The Rose Maiden," " The Sleeping Beauty," " The Corsair," &c.; symphonies, chamber-music, songs, &c.

**Cramer, John Baptist** (1771–1858). Composer and pianist. Born at Mannheim; died in London. Famous for his pianoforte *études*.

**Croft, Dr. William** (1678–1727). Born at Nether Eatington, in Warwickshire. A pupil of Dr. Blow at the Chapel Royal. Was organist of Westminster Abbey and of the Chapel Royal. Wrote a number of anthems, sonatas, songs, hymn-tunes, &c. Died at Bath.

**Crotch, Dr. William** (1775–1847). Born at Norwich. The son of a carpenter of musical tastes. Displayed a strong leaning towards music from his earliest years, and when only fifteen was appointed organist of Christ Church, Oxford. In 1820 he was made Lecturer on Music at the Royal Institution, London, and in 1822 was appointed Principal of the Royal Academy of Music, founded in that year. He enjoyed a great reputation as a composer and teacher. He died at Taunton.

**Cui, César Antonovitch.** Russian composer. Born at Vilna, January 6th, 1835; died in Petrograd, March 1, 1918.

**Cummings, Dr. William Hayman.** Composer, organist, tenor vocalist, and writer. Born in 1835 at Sidbury, in Devonshire. Principal Guildhall School of Music from 1896 till his death in 1915.

**Curwen, John.** Born at Heckmondwike, November 14, 1816; died at Manchester, May 26, 1880. Pastor at Plaistow, 1844. Developed Tonic-Solfa system and notation, using as a basis the methods of Miss Glover of Norwich. Founded the Tonic-Solfa Association, 1853; Tonic-Solfa College, 1863. Wrote many books on Tonic-Solfa and kindred subjects.

**Cusins, Sir William.** Born in London in 1833; died 1893. Organist of the Queen's Private Chapel; master of the music to the Queen; conductor of the Philharmonic, &c. An excellent pianist.

**Czerny, Carl** (1791–1857). Pianist and teacher; noted for his pianoforte studies.

**D'Albert, Eugen.** See **d'Albert.**

**Dale, Benjamin James.** English composer. Born at Crouch Hill, July 17, 1885.

**Dallier, Henri.** French organist and composer. Born at Rheims, 1849.

**Dannreuther, Edward** (1844–1905). Writer and pianist. Born at Strasburg; died in London. A distinguished advocate of the advanced school of musical art, being in a special degree a champion of Wagner.

**Darke, Harold E.** English organist, composer and conductor. Born at Highbury, London, October 29, 1888.

**Davies, Ben.** Tenor singer. Born at Pontardawe, Wales, January 6, 1858. A wonderful example of long-sustained vocal eminence, for he was still singing with distinction at the Handel and other festivals when over sixty years of age.

**Davies, Fanny.** English pianist. Born in Guernsey, June 27, 1861. A pupil of Madame Schumann. Appeared with great success in principal European cities from 1885 to 1923.

**Davies, Henry Walford.** Organist, composer, conductor and educationist. Born at Oswestry, September 6, 1869. Organist, Temple Church, London, 1898–1919; conductor, Bach Choir, 1903–7; Professor of Music, University College of Wales, Aberystwyth, 1919–1926; Chairman, Welsh National Council of Music, from 1919. Organist at St. George's Chapel, Windsor, from 1927 to 1932. His compositions are in many forms, and all are marked by sincerity and lofty purpose. As a combination of lecturer, adjudicator at festivals, broadcaster, and director of popular musical education he is probably without an equal. Knighted 1922.

**Dawson, Frederick.** English pianist. Born at Leeds, July 16, 1868. Very successful in lecture-demonstration and as an adjudicator.

**Debussy, Claude Achille.** French composer. Born at St. Germain-en-Laye, near Paris, August 22, 1862; died in Paris, March 26, 1918. He exercised enormous influence on practically the whole of European music during the greater part of his career, and materially extended the resources of the art, notably in regard to harmony and pianoforte effects.

**De Greef, Arthur.** Belgian pianist. Born at Louvain, October 10, 1862.

**D'Indy, Vincent.** *See* **d'Indy.**

**Délibes, Clement** (1836–1891). Born at Saint Germain du Val. Entered the Paris Conservatoire in 1848. A pupil of Adolphe Adam. Wrote some exquisite ballet music ("Coppelia," "Sylvia," &c.) and also several operas. Died in Paris.

**De Lisle, Claude Joseph Rouget** (1760–1836). Born at Montaigu, Lons-le-Saunier. An officer of Engineers. Famous as the composer of the "Marseillaise." Died at Choisy-le-Roi.

**Delius, Frederick.** British composer. Born at Bradford, Yorks, January 29, 1863; died, June 10, 1934. His parents opposed his desire to adopt a musical career, and he spent the early part of his adult life in business. He then went to Florida, where he managed an orange plantation. In 1885 he became a music teacher in Virginia, and in the following year went to Leipzig to study. In 1888 he settled in France, where he resided until his death. His music was long esteemed in Germany more than elsewhere, but of late years it has been increasingly admired in England.

**Dent, Edward Joseph.** English musicologist. Born at Ribston, Yorks, July 16, 1876. Appointed Cambridge Professor of Music, 1926.

**Dibdin, Charles** (1745–1814). Composer and vocalist. Born at Southampton. The son of a silversmith. At the age of fifteen was engaged as singing actor at Covent Garden Theatre. He produced many popular plays interspersed with music, such as "The Padlock," "The Waterman," "The Quaker," &c. In 1789, Dibdin commenced his celebrated and, at that time, novel "entertainments." His fame, however, rests upon his sea-songs. As a recognition of the national importance of these songs, the Government, in 1802, bestowed on him a pension of £200 a year.

**Dohnányi, Ernst von.** Hungarian composer, pianist, and conductor. Born at Pozsony, Hungary, July 27, 1877.

**Dolmetsch, Arnold.** French expert on ancient musical instruments. Born at Le Mans, 1858. Has established a factory at Haslemere, Surrey, where, with his family, he makes and plays obsolete instruments.

**Donizetti, Gaetano** (1797–1848). Born at Bergamo. Wrote about seventy operas, of which only a few are even known by name to-day—"Don Pasquale," "L'Elisir d'Amore," "La Fille du Regiment," &c.

**Dowland, John** (1562–1626). Composer and lute-player. Born and died at Westminster. A celebrated madrigal and song writer.

**Dragonetti, Domenico** (1763–1846). A distinguished *virtuoso* on the double-bass. Born at Venice; died in London.

**Dubois, Théodore.** French organist and composer. Born at Rosnay, August 24, 1837; died in Paris, June, 1924.

**Ducasse.** *See* **Roger-Ducasse.**

**Dukas, Paul.** French composer. Born in Paris, October 1, 1865. Best known by his sparkling scherzo for orchestra, "L'Apprenti Sorcier."

**Dunhill, Thomas Frederick.** English composer. Born at Hampstead, February 1, 1877. A distinguished authority on chamber music.

**Dunn, John.** English violinist. Born at Hull, 1866.

**Dussek, Johann Ludwig** (1761–1812). Pianist and composer. Born at Tschaslau in Bohemia. Held in high estimation as a pianoforte-player both in Paris and in London. Wrote twelve concertos, quintets, quartets, trios, sonatas, &c. Died at St. Germain-en-Laye.

**Dunstan, Ralph.** English writer and composer. Born at Carnon Downs, Truro, November 17, 1857. Died, April 2, 1933.

**Duparc, Henri Fouques.** French composer. Born in Paris, January 21, 1848.

**Dupré, Marcel.** French organist and composer, and unusually gifted improvisor. Born at Rouen, May 3, 1886.

**Dvořák, Antonin** (1841–1904). Educated in the Organ School at Prague. One of the most gifted composers of the modern German school. Has written symphonies, cantatas, some sacred compositions, chamber-music, &c., all of a strongly marked national character. His "Spectre's Bride," the remarkable "New World" symphony, and the pianoforte quintet (Op. 81), are exceptionally fine works, and illustrate only a few phases of a musical individuality every manifestation of which is excellent.

**Dykes, Rev. John Bacchus** (1823–1876). Born at Hull; died at St. Leonards. A celebrated writer of hymn-tunes.

**Dyson, George.** English composer and writer. Born at Halifax, May 28, 1883.

**Elgar, Edward William.** Born at Broadheath, near Worcester, June 2, 1857. Practically self-taught, he began his musical life as organist, violinist, and bandmaster, and to the intimate acquaintance he thus made with the practical side of instrumental music his brilliant orchestration is largely due. His first choral works were "King Olaf" (1896) and "The Light of Life" (1896). His "Enigma" variations, which remains one of the finest of modern orchestral works, appeared a few years later. "The Dream of Gerontius" was first performed at Birmingham in 1900, but its beauty was not realised till 1902, when its performance at Düsseldorf drew high praise from German critics. "Gerontius" has since taken its place as one of the most popular of oratorios. Elgar has followed up the "Enigma" and "Gerontius" with a steady stream of works of the highest class, including two symphonies, the "Cockaigne" and "Falstaff" overtures, a violin concerto, a violoncello concerto, a string quartet and quintet, the oratorios "The Apostles" and "The Kingdom," and a host of other choral works, large and small, many of which have achieved enormous popularity. He was knighted in 1904, and received the Order of Merit in 1911. Died, February 23, 1934.

**Ella, John** (1802–1888). Violinist and writer. Born at Thirsk; died in London. In 1845, instituted the series of chamber-concerts known as the "Musical Union." In connection with these chamber-concerts, Ella prepared "analytical programmes," an example which has since been largely followed.

**Ellingford, Herbert Frederick.** English organist. Born in London, February 8, 1876. Appointed to St. George's Hall, Liverpool, in succession to A. L. Peace.

**Elvey, George Job** (1816–1894). Born at Canterbury. A choir-boy in the Cathedral there. In 1835 appointed organist of St.

George's, Windsor. Knighted in 1871. Retired from St. George's in 1882. Wrote principally Church music.

**Elwes, Gervase.** English tenor. Born at Billing, Northampton, November 15, 1866; met his death by accident at Boston railway station on January 13, 1921, during an American tour. He was specially famous for his performance of the title rôle in "Gerontius," and in the part of the Evangelist in the "St. Matthew Passion."

**Ernst, Heinrich Wilhelm** (1814–1865). Violinist and composer. Born at Brunn. Studied at the Vienna Conservatoire; afterwards a pupil of De Beriot. Travelled all over Europe, achieving great success wherever he appeared.

**Esposito, Michele.** Composer and pianist. Born near Naples, September 29, 1855. In 1882 was appointed chief pianoforte professor at the Royal Irish Academy of Music, Dublin, in which city he has since done distinguished work as player and conductor.

**Evans, Harry.** Welsh choral conductor. Born at Dowlais, May 1, 1873; died at Liverpool, July 23, 1914.

**Falla, Manuel de.** Spanish composer. Born at Cadiz, November 23, 1876. The most prominent figure in modern Spanish music. He is best known in England by his ballet, "The Three-cornered Hat."

**Farrar, Ernest Bristow.** English composer and organist. Born at Blackheath. July 7, 1885. His death in battle (1918) cut short a career of great promise.

**Fauré, Gabriel Urbain.** French composer. Born at Pamiers (Ariège), May 13, 1845; died, October 31, 1924. One of France's most distinguished musicians, and a pioneer in the musical re-birth of that country. In October 1922 he received the unusual honour of an "Hommage National" at the Sorbonne.

**Fayrfax, Dr. Robert** (1460–1529). Composer and organist. Born at Bayford; died at St. Albans.

**Fétis, François Joseph** (1784–1871). Composer, organist and writer. Born at Mons, in Belgium. Studied in Paris. In 1818 appointed Professor at the Conservatoire. In 1827 started the "Revue Musicale." Wrote many theoretical works, and also the great "Biographie universelle des musiciens et bibliographie générale de la musique." Died in Brussels.

**Field, John** (1782–1837). Composer and pianist. Born in Dublin. A pupil of Clementi. Spent the greater part of his life in Russia, where he enjoyed a great reputation as performer and teacher. In his compositions, particularly in his dreamy and graceful nocturnes, Field may be considered the forerunner of Chopin.

**Flotow, Friedrich, Freiherr von** (1812–1883). Composer. Born at Bentendorf, in Mecklenburg. Wrote "Alessandro Stradella" and "Martha," the latter opera being that by which he is most widely known.

**Foulds, John Herbert.** English composer and conductor. Born at Manchester, November 2, 1880.

**Franck, César August.** Belgian composer. Born at Liège, December 10, 1822; died in Paris, November 8, 1890. Began his career as *virtuoso* pianist, but his natural bent lay elsewhere, and his genius first revealed itself in his masterly playing and improvising on the organ. As a composer he developed late and slowly, chiefly owing to his being compelled to work hard as a teacher. Public recognition came only in his last year, and in England his music was not widely known till the War, when attention was transferred from the music of modern Germany to that of France and Belgium. Franck was a great teacher, and exercised a profound influence on a circle of composers of whom d'Indy has proved to be the most distinguished. Though a prolific composer, Franck's great fame rests on a comparatively small number of works—a symphony, a string quartet, a string quintet, a sonata for violin and pianoforte, and a group of pianoforte and organ solos.

**Frescobaldi, Girolamo** (1583–1644). Composer and organist. Born at Ferrara. Organist of St. Peter's at Rome. Died in Rome.

**Fuchs, Carl.** Violoncellist. Born at Offenbach-o-M., June 3, 1865. After many tours in Europe settled in Manchester ,where he became chief professor of his instrument at the Royal Manchester College of Music, and for many years principal 'cellist in the Hallé Orchestra.

**Furtwängler, Wilhelm.** German conductor and composer. Born in Berlin, January 25, 1886.

**Gabrieli, Andrea** (1510–1586). Composer and organist. Born and died in Venice.

**Gabrieli, Giovanni** (1557–1612). Composer and organist. Nephew of Andrea. Born and died in Venice.

**Gabrilowitsch, Ossip Salomonowitsch.** Russian pianist and conductor. Born in Petrograd, February 7, 1878. Married Clara Clemens (contralto), daughter of Mark Twain.

**Gade, Niels Wilhelm** (1817–1890). Composer.

Born and died in Copenhagen. Wrote symphonies, overtures, an opera, choral works, chamber-music, &c. In his compositions leaned towards the style of Mendelssohn. Displayed a strongly-marked Scandinavian character in his music, and was a notable master of instrumentation.

**Galli-Curci, Amelita.** Italian coloratura singer. Born at Milan, November 18, 1890. Was trained as a pianist, and as a singer is largely self-taught.

**Gardiner, H. Balfour.** English composer and conductor. Born in London, November 7, 1877.

**Garratt, Percival.** English pianist and composer. Born at Little Tew Grange, Oxford, in May 1877.

**Gatty, Nicholas Comyn.** English composer. Born at Bradfield, Sheffield, September 13, 1874.

**Geminiani, Francesco** (1680–1762). Composer and violinist. Born at Lucca. One of the great Italian violin *virtuosi* of the eighteenth century. Lived in London for many years. Died in Dublin.

**Gerhardt, Elena.** German *lieder* singer. Born at Leipzig, November 11, 1883.

**German, Edward.** English composer. (Real name, Jones.) Born at Whitchurch, Shropshire, February 17, 1862. The successor of Sullivan as a representative composer of first-rate light music. Though less successful than Sullivan in opera (probably because he has found no Gilbert), he excels him as an instrumental writer, with a long list of admirable orchestral works—Symphony in E flat, Welsh Rhapsody, "The Seasons," many suites of dances, and much incidental music for the theatre, of which that written for Irving's production of "Henry VIII" at the Lyceum in 1892 is best known. German's success is due to an unusual blend of solid musicianship, melodic invention, and orchestration that is both deft and brilliant. Knighted in 1928.

**Gibbons, Orlando** (1583–1625). Composer and organist. Born at Cambridge. In 1604 appointed organist of the Chapel Royal, and in 1623 organist of Westminster Abbey. A notable madrigal writer, but even more celebrated as a composer of Church music. Died at Canterbury.

**Gibbs, Cecil Armstrong.** English composer. Born at Great Baddow, Essex, August 10, 1889.

**Giesiking, Walter.** Pianist. Born at Lyons, November 5, 1895.

**Gigli, Beniamino.** Italian tenor. Born at Recanati, March 20, 1890.

**Gigout, Eugène.** French organist and composer. Born at Nancy, March 23, 1844; died at Paris in 1926. Was organist at St. Augustin, Paris, from 1862 till his death. A scholarly composer, he wrote a great number of organ works, both for concert and church use, among the latter being several hundred admirable short pieces in the ancient modes.

**Glazunov, Alexander Constantinovitch.** Russian composer. Born in Petrograd, July 29, 1865. At the beginning of his career he belonged to the "national" group of Russian composers, but later he became increasingly influenced by the German Symphonic School, and wrote many instrumental works in "cyclic" form, among them being eight symphonies.

**Glinka, Michael Ivanovitch** (1804–1857). Composer and pianist. Born at Novaspaskoi, near Smolensk. He is *par excellence* Russia's national composer. His most successful work was the opera, "La vie pour le Czar," produced in 1836. Outside Russia, Glinka is perhaps best known by his two concert compositions, "La Jota Aragonese" and "Kamarinskaja."

**Gluck, Christopher Willibad, Ritter von** (1714–1787). Composer. Born at Weidenwang, in the Upper Palatinate. Studied music in Prague, Vienna, and Milan. Wrote some very successful operas in the conventional Italian style of the period. With the composition of "Orfeo ed Eurydice" (1762) entered upon his career as a reformer of opera.

**Godfrey, Dan.** English conductor. Born in London, June 20, 1868. A member of a family long famous in British Army music. Was director of music for the Bournemouth Corporation from 1893 to 1934, and has done much to make British music known. Knighted in 1922.

**Godowsky, Leopold.** Polish pianist and composer. Born at Vilna, February 13, 1870.

**Goetz, Hermann** (1840–1876). Composer. Born at Königsberg; died at Zurich. Wrote an opera on the subject of "The Taming of the Shrew," a symphony, &c.

**Goldschmidt, Otto** (1829–1907). Pianist and composer. Married Jenny Lind, 1852.

**Golomark, Karl.** Austrian composer. Born at Keszthely, May 18, 1830; died in Vienna, January 2, 1915. Began as a violinist, but later was a successful composer, especially with the opera "Queen of Sheba."

**Goodson, Katharine.** English pianist. Born at Watford.

**Goodwin, Amina Beatrice.** English pianist. Born at Manchester, 1867.

**Goossens, Eugène.** English composer and conductor. Born in London, May 26, 1893. Was first a violinist, playing in Sir Henry Wood's orchestra, and in the Philharmonic

String Quartet. Later developed rapidly both as composer and conductor, visiting America in 1923 in the latter capacity with brilliant success, and subsequently holding important appointments in that country. The family is distinguished in the musical world. The grandfather, Eugène (born at Bruges, 1845, died at Liverpool, 1896), and father, Eugène (born at Bordeaux, 1867), were well-known operatic conductors; Leon, a brother, is a famous oboist, and two sisters, Sidonie and Marie, are harpists.

**Gordon-Woodhouse, Violet.** English pianist. Born in Sussex. She has specialised in harpsichord and clavecin playing.

**Goss, John** (1800–1880). Composer and organist. Born at Fareham, in Hampshire. Educated in Chapel Royal. In 1838 appointed organist at St. Paul's Cathedral. Knighted in 1872. A prominent composer of Church music. Died in London.

**Gossec, François Joseph** (1733–1829). Composer. Born at Vergnières; died at Passy. Wrote many operas, symphonies, and lesser compositions, of repute in their day. During the Directory, Gossec received the official title, "First Composer of France."

**Gounod, Charles** (1818–1893). Composer and organist. Born and died in Paris. Studied at the Paris Conservatoire, where he obtained the first prize for composition. Composer of many operas (of which "Faust" is the most famous) and oratorios.

**Grainger, Percy.** Australian pianist and composer. Born at Brighton, Victoria, July 8, 1882. Settled in America, where he became nationalised, in 1915.

**Granados Campina, Enrique.** Spanish composer and pianist. Born at Lerida, July 29, 1867; died March 24, 1916, being drowned in the sinking of the *Sussex* in the English Channel by a German submarine.

**Graun, Karl Heinrich** (1701–1759). Composer. Born at Wahrenbrüch, in Saxony. Wrote some fifty cantatas, and about thirty operas. His principal work is his "Passion music" (Der Tod Jesu), which is still sometimes performed.

**Gray, Alan.** English organist and composer. Born at York, December 23, 1855. Organist at Trinity College, Cambridge, 1892–1930. Has written many admirable works, especially for the organ.

**Greene, Harry Plunket.** Irish baritone. Born in Dublin, June 24, 1865. One of the most distinguished *lieder* and folk-song singers of his generation.

**Greene, Maurice** (1695–1755). Composer and organist. Born and died in London. Wrote Church music. Projected the great "Cathedral Music" afterwards completed by Boyce.

**Gretry, Andre Ernest** (1741–1813). Composer. Born at Liége; died at Montmorency. A prolific writer of French opera.

**Grieg, Edvard.** Composer and pianist. Born at Bergen in 1843. Studied at Leipzig Conservatoire. In Copenhagen came under the influence of Gade. Has written a pianoforte concerto, orchestral works, songs, chamber-music, &c., all with a pronounced Norwegian character. Died 1907.

**Grove, George.** Writer. Born at Clapham, in 1820. Originally a Civil engineer. For many years connected with the Crystal Palace, and for the orchestral concerts given there wrote a long series of analytical programmes. In 1883, appointed first Principal of the Royal College of Music, and upon its inauguration received the honour of knighthood. As editor of the "Dictionary of Music and Musicians," Sir George rendered a lasting service to the cause of musical art. Died 1900.

**Guilmant, Felix Alexandre.** Composer and organist. Born at Boulogne in 1837; died Paris, 1911.

**Hahn, Reynaldo.** French composer. Born at Caracas (Venezuela), August 9, 1874.

**Halévy, Jacques François** (1799–1862). Composer. Born in Paris; died at Nice. Opera writer of the French school. Principal work, "La Juive."

**Haley, Olga.** English mezzo-soprano. Born at Huddersfield, November 10, 1898.

**Hall, Marie.** English violinist. Born at Newcastle-on-Tyne, April 8, 1884.

**Hallé, Sir Charles** (1819–1895). Pianist and conductor. Born at Hagen, near Elberfeld. Studied at Darmstadt under Kirk. In 1848 came to England. Started his Manchester concerts in 1857. During his career of forty-seven years in this country, Sir Charles Hallé rendered great services to the cause of musical art, through his work as a teacher, and the more widespread educational influence of his recitals, in London and the provinces, undertaken singly, or in conjunction with his accomplished wife (Mme Norman Neruda); and the concerts of his world-famous Manchester orchestra. Died in Manchester.

**Handel, George Frederick** (1685–1759). Composer. Born at Halle. Played both the organ and clavier when only seven years old. First opera, "Almira," performed at Hamburg in 1705. In 1708 went to Italy, and four years later settled in England. In or about 1737 turned his attention to oratorio, after having written some forty-two operas in accordance with the taste of the period. By the success of "The Messiah" he regained his popularity and restored his fortunes, both of which had suffered from the failures of his operatic ventures and the opposition of jealous factions. Died in 1759, having been totally blind for five years.

**Hambourg, Mark.** Pianist. Born at Bogutchar, S. Russia, June 1, 1879.

**Harrison, Beatrice.** Violoncellist. Born at Roorke, N.W. India.

**Harrison, Julius.** English composer and conductor. Born at Stourport, March 26, 1885. One of the British National Opera conductors, and director of the Opera class at the R.A.M. Conductor, Municipal Orchestra, Hastings.

**Harrison, May.** Violinist. Born at Roorke, N.W. India.

**Harty, Agnes.** *See* **Nicholls, Agnes.**

**Harty, Hamilton.** Irish composer and conductor. Born at Hillsborough, Co. Down, 1880. Largely self-taught, he was an organist at twelve. On coming to London in 1900 he soon made himself a position as accompanist and conductor. Conductor of Hallé Orchestra, Manchester, for some years; and of London Symphony Orchestra. Made highly successful visits to America. Knighted in 1925.

**Harwood, Basil.** English organist and composer. Born at Woodhouse, Glos., April 11, 1859.

**Hatton, John Liptrot** (1809–1886). Composer and pianist. Born at Liverpool. During Charles Kean's Shakespearean revivals, Hatton was conductor at the Princess's Theatre, and wrote incidental music to many of Shakespeare's plays. Among his compositions are also an oratorio, "Hezekiah," various small operas, Church music, &c. It is, however, for his songs that Hatton's name is remembered.

**Hawkins, Sir John** (1719–1789). Historian. Born in London. The son of an architect. By profession Hawkins was an attorney. He was an original member of the Madrigal Society, also a member of the Academy of Antient Music, and of Dr. Johnson's club, which met on Thursday evenings in Ivy Lane. Hawkins' "General History of the Science and Practice of Music" is a monument of patient research, and a great storehouse of out-of-the-way information.

**Haydn, Franz Joseph** (1732–1809). Composer. Born at Rohrau, a village in Upper Austria. The son of a wheelwright, and the eldest of twenty children. Was a chorister and pupil in the choir-school of the Cathedral of St. Stephen, at Vienna, until his sixteenth year, when he was harshly dismissed for some trifling fault. For some time he struggled on, working industriously, but always on the verge of the most utter destitution, until, entering the service of the then renowned Italian composer, Porpora, he was enabled, under his direction, to prosecute his studies amid more favourable surroundings. When twenty-eight years of age he was appointed Kappelmeister to Prince Esterhazy, in whose service, and that of his successor, he remained for thirty years; living, for the greater part of the year, at the country-seat of the Esterhazys, discharging the various duties of his position, and writing an immense quantity of music. While Haydn remained thus, leading a life of tranquil industry, his reputation spread far and wide, and his visits to this country, albeit undertaken somewhat unwillingly, were veritable triumphs. Seemingly inspired by Handel's example, Haydn, after his return to Germany, produced the oratorios, "The Creation" (1797) and "The Seasons" (1801). Haydn was an amazingly prolific composer. Among his works are 118 symphonies, 83 quartets, 24 trios, 19 operas, 5 oratorios, 24 concertos, 15 masses, 44 pianoforte sonatas, &c., &c. He created the modern symphony and quartet, and may be said to be the father of the instrumental music of the nineteenth century.

**Haydn, Johann Michael** (1737–1806). A younger brother of Joseph Haydn. Born at Rohrau; died at Salzburg. Wrote Church music.

**Heller, Stephen** (1815–1888). Composer and pianist. Born at Pesth; died in Paris. Wrote many charming fantasias, *études*, polonaises, and drawing-room pieces generally, for the pianoforte.

**Helmholtz, Hermann Ludwig** (1821–1894). Born at Potsdam. One of the greatest *savants* of modern times. Has rendered a valuable service to musical art in the writing of his great work on Sound and Acoustics—"Lehre von den Tonempfindungen."

**Henschel, George.** Composer, baritone vocalist, pianist and conductor. Born at Breslau, 1850. Appeared in public in Berlin as a pianist when twelve years old. Studied at Leipzig. Made many concert-tours in Germany as a singer. Has conducted orchestral concerts in Boston, London, and in Scotland. Has written an opera, an oratorio, a "Stabat Mater," some instrumental music, and some admirable songs. Was still occasionally singing in public with surprising success when over seventy years of age. Knighted in 1914.

**Hensel, Fanny Cécile** (1805–1847). Composer and pianist. Borne at Hamburg; died in Berlin. A sister of Mendelssohn.

**Henselt, Adolph** (1814–1889). Composer and pianist. Born at Schwalbach; died at Warmbrunn.

**Hérold, Louis Joseph Ferdinand** (1791–1833). Composer. Born and died in Paris. Wrote "Zampa," "Le Pré aux Clercs," and other operas.

**Heseltine, Philip.** *See* **Warlock, Peter.**

**Hiller, Ferdinand** (1811–1885). Composer and pianist. Born at Frankfort; died at Cologne. Founded the Conservatoire at Cologne. Wrote symphonies, oratorios ("Destruction of Jerusalem," and "Saul"), six operas, overtures, sonatas, songs, &c.

**Hindemith, Paul.** German composer and viola-player. Born at Hanau, November 16, 1895.

**Hofmann, Josef.** Pianist. Born at Warsaw in 1877.

**Holbrooke, Joseph.** English composer. Born at Croydon, July 5, 1878. A prolific composer, and also a successful pianist and conductor.

**Hollins, Alfred.** English organist and composer. Born at Hull, September 11, 1865. Though blind from birth, he is a brilliant recitalist and a gifted improvisor.

**Holst, Gustav Theodore.** English composer. Born at Cheltenham, September 21, 1874; died, May 25, 1934. Of Swedish extraction on his father's side. Began as an organist, but became a trombone player, and a member of the Scottish Orchestra. In 1903 came the first of several school appointments, the most important being that to St. Paul's Girls' School, Hammersmith, and as composition professor at R.C.M. (1919). Since the War he has rapidly come to prominence with many fine works, notably "The Hymn of Jesus," "The Planets," "The Perfect Fool," "Ode to Death," Choral Symphony, &c.

**Honegger, Arthur.** Composer. Born (of Swiss parents) at Havre, 1892.

**Howells, Herbert.** English composer. Born at Lydney, Glos., October 17, 1892. Has written excellent chamber music, organ works, songs, &c. Appointed professor, R.C.M., 1920.

**Hummel, Johann Nepomuk,** (1778–1837). Composer and pianist. Born at Pressburg. A pupil of Mozart and Albrechtsberger. A celebrated *virtuoso* in his day. Wrote masses, cantatas, operas, chamber-music, &c. Died at Weimar.

**Humperdinck, Ernst.** Composer. Born at Sieburg, on the Rhine, in 1854. Achieved great success with the opera "Hänsel and Gretel." Died September 27, 1921.

**Hyde, Walter.** English operatic tenor. Born at Birmingham, February 6, 1875.

**d'Indy, Paul Marie Théodore Vincent.** French composer. Born in Paris, March 27, 1851. The most distinguished of the circle of composers that gathered round César Franck. His chief works are "Fervaal" (a lyric drama) and "Symphonie sur un thème Montagnard Français." He has also written a treatise on the composition and study of Beethoven. Is head of the Schola Cantorum in Paris—an institution founded in memory of Franck.

**Ireland. John.** English composer. Born at Bowden, Cheshire, August 13, 1879. He has achieved notable success as a writer of pianoforte, chamber, and orchestral music, and songs. His idiom is robust and austere, and makes no concession to popular taste; and his self-criticism is so severe as to restrict his output to dimensions small compared with that of most of his contemporaries. He is an admirable pianist, and frequently takes part in the performance of his own chamber music.

**Jahn, Otto** (1813–1869). Composer and writer. Born at Kiel; died at Göttingen. His celebrated "Life of Mozart" is his chief contribution to musical literature.

**Järnefelt. Edvard Armas.** Finnish composer and conductor. Born at Viipuri (Viborg), August 14, 1869.

**Jensen, Adolf.** German composer. Born at Königsberg, January 12, 1837; died at Baden-Baden, January 23, 1879. Wrote much pianoforte music of an intimate character.

**Jeritza, Marie.** Austrian operatic soprano. Born at Brünn.

**Joachim, Dr. Joseph.** Violinist and composer. Born in 1831, at Kittsee, near Pressburg, in Hungary. In 1843 went from the Vienna Conservatoire to that of Leipzig. In 1850 became orchestral leader at Weimar, and in 1854 occupied the same position at Hanover. In 1869 was appointed Professor and Director of the High School of Music at Berlin. One of the greatest of violinists. Died 1907.

**Jones, Evelyn Howard.** English pianist. Born in London, 1877.

**Jongen, Joseph.** Belgian composer. Born at Liège, December 14, 1873. Has written much excellent organ and chamber music, in which the influence of both Franck and Debussy is apparent.

**Karg-Elert, Sigfrid.** German composer. Born at Oberndorf-on-Neckar, November 21, 1879. Though he has written much for almost every medium, he is known in England chiefly through his fine music for the organ. Died, April 9, 1933.

**Kidson, Frank.** Musical antiquary, and collector and arranger of folk-songs. Born at Leeds, November 15, 1855; died there, November 7, 1926.

**Kjerulf, Halfdan** (1815–1868). Composer. Born at Christiania, where he died. Originally a theological student, afterwards worked at Leipzig Conservatoire. Wrote songs, pianoforte pieces, &c.

**Kodály, Zoltán.** Hungarian composer. Born at Kecskemét, December 16, 1882. His compositions are largely influenced by the folk-songs of his native land, of which he has collected over three thousand.

**Korngold, Erich Wolfgang.** German composer. Born at Brünn, May 29, 1897. Was a prodigy in composition, but has not fulfilled the brilliant promise of his childhood.

**Kreisler, Fritz.** Austrian violinist. Born in Vienna, February 2, 1875. One of the most distinguished players of the present day.

**Kreutzer, Conradin** (1780–1849). Composer. Born at Mösskirch, in Baden. Wrote many operas, songs, &c. His opera, "Das Nachtlager von Granada," still survives in Germany. Died at Riga.

**Kreutzer, Rudolph** (1766-1831). Composer and violinist. Born at Versailles. A pupil of Viotti. Professor at the Royal School of Music of Paris. Wrote operas, violin concertos, duets, &c.

**Kussevitsky, Serge Alexandrovitch.** Russian double-bass player and conductor. Born at Tver in 1864.

**Lalo, Edouard** (1823–1892). Composer and violinist. Born at Lille. Wrote operas ("Namouna," "Fiasco," "Le Roi et Ys"), suites, and two concertos (one of them the remarkable "Symphonie Espagnole"). Died in Paris.

**Lamond, Frederic.** Composer and pianist. Born in Glasgow in 1868.

**Lamoureux, Charles.** Born at Bordeaux, 1834. One of the most notable of modern conductors. Died in Paris. 1899.

**Landowska. Wanda.** Polish pianist. Born at Warsaw, 1877. Has specialised as a player of harpsichord and clavichord music on the original instruments.

**Lazarus, Henry** (1815–1895). Clarinettist. Born and died in London.

**Léfèbure-Wely, Louis Jacques** (1817–1869). Composer and organist. Born and died in Paris.

**Leginska, Ethel** (real name Liggins). English pianist. Born at Hull, April 13, 1890. Settled in America.

**Lehár, Franz.** Hungarian operetta composer. Born at Komarom, April 30, 1870. Has written about thirty works, "The Merry Widow" being the best known.

**Lehmann, Liza.** English singer and song composer. Born in London, 1862; died there September 19, 1918. Achieved great success with the song-cycle "In a Persian Garden," and followed it up with many other songs and cycles.

**Lemare, Edwin Henry.** Distinguished recital organist and composer. Born at Ventnor, 1865.

**Leoncavallo, Ruggiero.** Composer. Born at Naples in 1858. Studied at Naples Conservatoire. Made his reputation with the two-act opera, "Pagliacci," produced in May 1892. Died August 9, 1919.

**Leschetitzky, Theodor.** Composer and pianist. Born in Vienna, in 1830. Celebrated pianoforte teacher. Died November 14, 1915.

**Ley, Henry George.** English organist. Born at Chagford, Devon, December 30, 1887. Appointed Precenter of Eton College, 1926. One of the finest players of his day.

**Lind, Jenny** (1820–1887). Soprano vocalist. Born at Stockholm. Made many tours, everywhere exciting enthusiasm by her operatic impersonations, and still more by her rendering of the simplest national melodies. Died at Malvern.

**Liszt, Franz** (1811–1886). Composer and pianist. Born at Raiding, near Oedenburg, in Hungary. At nine years of age already possessed considerable skill as a pianist. Studied under Czerny and Salieri in Vienna, and afterwards in Paris. In 1848 he went to Wiemar as conductor of the Court Orchestra, and by his exertions, and the rare fascination of his artistic personality, quickly made Weimar one of the vital musical centres of the Continent. Marvellous as a pianist, Liszt also distinguished himself greatly as a composer, and there is a considerable body of music in all styles which bears his name. He was also an author of merit. Altogether, Liszt is one the the most remarkable figures in musical history. Died at Bayreuth.

**Litolff, Henry Charles** (1818–1891). Composer and pianist. Born in London; died in Paris.

**Lloyd, Edward.** Tenor vocalist. Born in London in 1845; died, March 31, 1927.

**Loewe, Johann Carl Gottfried** (1796–1869). Composer, organist, and pianist. Born at Halle, where he studied theology and music. In 1822 became cantor, and afterwards musical director of the Church of St. James, at Stettin. Died at Kiel. Of his numerous works, only the songs are remembered to-day.

**Lulli, Giovanni Battista** (1633–1687). Composer and violinist. Born in Florence. Brought to France as a boy. From being under-scullion, rose to be chief of the "Bande des petits violons" of Louis XIII. In 1671 appointed Director of the Grand Opera at Paris. Died in Paris.

**MacCunn, Hamish.** Composer. Born at Greenock in 1868. Wrote several choral works "Kilmeny," "Lord Ullin's Daughter," &c.), two interesting concert-overtures, two operas, and a number of songs. Died in London, August 2, 1916.

**Macdowell, Edward Alexander.** American composer and pianist. Born in New York, December 18, 1861; died there January 23, 1908. Undoubtedly the greatest composer so far produced by America, and the only one to receive general recognition in Europe. He studied the piano in France and Germany.

**Macfarren, Sir George Alexander** (1813–1887). Composer. Born in London. Studied at the Royal Academy of Music, where he became Professor in 1860, and Principal (in succession to Sterndale Bennett) in 1875. Produced a great quantity of music—operas, oratorios, cantatas, Church-music, overtures, symphonies, chamber-music, songs, &c. Besides these works, and his extensive official duties, Macfarren also rendered good service to musical art as editor of different musical classics, and as a writer of various theoretical and critical works. Died in London.

**Mackenzie, Sir Alexander Campbell.** Composer. Born in Edinburgh in 1847. In 1857 went to Germany, where he studied music at Schwarzburg-Sonderhausen. Returned to London in 1862, and became a pupil of M. Sainton, winning the King's Scholarship at the Royal Academy of Music in the same year. In 1865 settled in Edinburgh as a teacher, meanwhile devoting much of his time to composition. Later, after some years spent abroad, settled in London. Composed many admirable works—the cantatas "Jason," "Sayid," &c.; the oratorio "The Rose of Sharon," perhaps his best work; the poetic "Dream of Jubal"; his operas "Colomba" and "The Troubadour," together with a great deal of orchestral and other music. Principal of the Royal Academy of Music from 1888 to 1924.

**Macmillan, Ernest.** Canadian organist and composer. Born at Mimico, Ont., August 18, 1893. Succeeded Vogt as Principal of Toronto Conservatoire in 1926.

**Macpherson, Charles.** Organist and composer. Born in Edinburgh, May 10, 1870. Appointed to St. Paul's Cathedral, London, in 1916. Died, May 28, 1927.

**Mahler, Gustav.** Austrian composer and conductor. Born at Kalischt, July 7, 1869; died in Vienna, May 18, 1911. Wrote ten symphonies, mostly on a very large scale, and with frequent use of vocal soloists and chorus.

**Mainzer, Joseph** (1807–1851). Teacher of music; long known in England by his successful singing classes.

**Malibran, Maria Felicita** (1808–1836). Soprano vocalist. Born in Paris. A daughter of the famous tenor Garcia, by whom she was trained.

**Malipiero, Gian Francesco.** Italian composer. Born at Venice, March 18, 1882.

**Mallinson, Albert.** English song composer. Born at Leeds, November 30, 1870.

**Manners, Charles.** Bass vocalist. Born in London, 1857. Well known as head of the Moody-Manners Opera Companies. Married Fanny Moody, soprano vocalist.

**Manns, Sir August.** Conductor. Born at Stolzenburg, near Stettin, in 1825. Clarinettist in a military band, and violinist in the theatre orchestra at Stettin. In 1854 came to England, and in the following year was appointed conductor at the Crystal Palace, a post which he held for many years, with honour to himself and benefit to the cause of musical art. Died 1907.

**Marcello, Benedetto** (1686–1739). Composer. Born at Venice; died at Brescia.

**Marchesi, Blanche.** Eminent soprano vocalist and teacher of singing. Born in Paris, 1871.

**Martini, Giovanni Battista** (1706–1784). Composer and writer. Born at Bologna.

**Marx, Adolf Bernhard** (1799–1866). Born at Halle. Originally a lawyer, but afterwards devoted himself to music. As a composer was not a success, but wrote many very valuable theoretical and critical works.

**Mascagni, Pietro.** Composer. Born at Leghorn, in 1863. Son of a baker, and intended by his father for the legal profession. Studied in Milan, and afterwards led a precarious existence travelling about Italy with different small opera companies. While living in Cerignola as director of a music school, saw an announcement of prizes offered by Sonzogno, the great Italian music-publisher, for one-act operas. Took part in the competition, completing "Cavalleria Rusticana" in the nick of time, and so established himself. Later works—"L'Amico Fritz," "I Rantzau," "Silvano," "Zanetto," &c., have not had a like success.

**Matthay, Tobias.** English pianist, teacher, writer, and lecturer. Born in London, February 19, 1858. By reducing to a system the laws governing pianoforte technique and tone-production, he has profoundly influenced that branch of executive art.

**McEwen, John Blackwood.** Scottish composer and writer. Born at Hawick, April 13, 1868. His output is large, with chamber music as its most distinguished section. Succeeded Sir Alexander Mackenzie as Principal, R.A.M., in 1924.

**Medtner, Nicolas Raslovitch.** Russian composer. Born at Moscow, 1879.

**Méhul, Etienne Nicolas** (1763–1817). Composer. Born at Givet, in the Ardennes. At eleven years of age was organist of his native place. His principal work is his "Joseph en Egypte."

**Melba, Madame** (*née* Helen Porter Mitchell). Eminent soprano vocalist. Born at Burnley (Australia), 1859. Died, March 1931.

**Mendelssohn-Bartholdy, Jakob Ludwig Felix.** (1809–1847). Composer, pianist, and organist. Born at Hamburg. Son of a banker. Early showed a great talent for music, which was carefully cultivated from the outset. In 1833, already possessed of a European reputation, was appointed Musical Director at Düsseldorf. Two years later went to Leipzig as conductor of the Gewandhaus Concerts. Between 1835 and 1841, produced his pianoforte concerto in D minor, the 42nd and 114th Psalms, string quartet in E minor, Overture to "Ruy Blas," trio in D minor, and the "Hymn of Praise." Between 1841 and 1847 wrote "St. Paul," "Walpurgis Night," "Athalie," "Elijah," "Christus," C minor trio, &c., &c. The characteristic genius of Mendelssohn finds perhaps its most perfect expression in the "Midsummer Night's Dream" music, and in the concert-overture, "The Hebrides." Died at Leipzig.

**Mengelberg, Willem.** Dutch conductor. Born at Utrecht, March 28, 1871. Conductor of the Amsterdam Concertgebouw Orchester, the chief orchestra in Holland.

**Meyerbeer, Giacomo** (1791–1864). Composer. Born in Berlin. Displayed musical talent at a very early age, particularly as a pianist. His ruling ambition, however, was to become a composer. A pupil of the Abbé Vogler, he wrote a number of works which, excellent in their way, were marred by their extreme pedantry. Coming under the influence of Rossini, Meyerbeer forsook the methods of Vogler for the more attractive style of the Italians, and wrote several very successful operas in the Italian style. In later years he again changed his style of writing, and, with Scribe as his librettist, produced the series of grand operas, "Robert le Diable" (1831), "Les Huguenots" (1836), "Le Prophète" (1854), "L'Etoile du Nord" (1854), "Dinorah" (1859), and "L'Africaine" (not performed till 1865), upon which his fame as a composer depends. Died in Paris.

**Mlynarski, Emil.** Polish conductor, violinist, and composer. Born at Kibarty, July 18, 1870.

**Moeran, Ernest John.** English composer. Born at Osterley, Middlesex, December 31, 1894.

**Moiseiwitsch, Benno.** Russian pianist. Born at Odessa, February 22, 1890.

**Monteux, Pierre.** French conductor. Born in Paris, April 4, 1875. Now settled in America.

**Moody, Fanny.** Soprano vocalist. Born at Redruth, 1866.

**Morales, Pedro Garcia.** Spanish composer, poet, and writer. Born in Huelva, 1879. Studied at R.C.M., London.

**Morley, Thomas** (1557–1604). Composer and organist. Born and died in London.

**Mornington, Garret Wellesley, Lord** (1735–1781). Composer. Born at Dangan; died at Kensington. Wrote Church-music, glees, madrigals, &c. Father of the great Duke of Wellington.

**Moscheles, Ignaz** (1794–1870). Composer and pianist. Born at Prague. A pupil of Albrechtsberger and Salieri. From 1825 to 1844 lived in London. Died at Leipzig, where from 1844 he had been a teacher in the Conservatoire.

**Moszkowsky, Moritz.** Composer and pianist. Born at Breslau, August 23, 1854. Wrote a symphonic poem, "Jeanne d'Arc," an opera, "Boabdil," and many extremely effective pianoforte pieces. Died March 7, 1925.

**Moussorgsky, Modeste Petrovitch.** Russian composer. Born at Karevo, March 16, 1839; died in Petrograd, March 16, 1881. Wrote one of the finest of operas, "Boris Godunov," and many striking songs.

**Mozart, Johann Chrysostom Theophilus** (1756–1791). Commonly called Wolfgang Amadeus Mozart. Composer and pianist. Born at Salzburg. Excited universal enthusiasm as a child pianist in Germany, France, Italy, and England. In 1768 was commissioned by the Emperor (Joseph II) to write a comic opera (" La Finta Semplice "). Wrote " Idomeneo " in 1781, " Die Entführung aus dem Serail " in 1782, and in 1786 " Figaro," the intervening years witnessing the production of many pianoforte-concertos, sonatas, quartets, &c. During the five years elapsing between the year 1786 and his death Mozart poured out a marvellous flood of masterpieces—" Don Giovanni," " Zauberflöte," " Cosi fan tutte," " Clemenza di Tito "; the three great symphonies in E flat major, G minor, and C major (" Jupiter "); the Requiem, and a great body of music of all kinds. During his life of thirty-six years Mozart is known to have written at least 626 works, among which are 20 masses, 23 operas, 22 sonatas for the pianoforte, 45 sonatas for piano and violin, 49 symphonies, and 55 concertos, besides quartets, trios, songs, &c. All this was accomplished by a busy teacher and *virtuoso*. He died in Vienna.

**Mozart, Leopold** (1719–1787). Composer and violinist. Born at Augsburg. The father of Wolfgang Amadeus Mozart. Wrote Church music, oratorios, and operas. He also wrote a " Violin School," which went through many editions in various languages.

**Mozart, Maria Anna** (1751–1829). Pianist. A daughter of Leopold Mozart, and together with her brother Wolfgang, taken on tour through Europe as a musical prodigy. Born and died at Salzburg.

**Nicholson, Sydney H.** English organist. Born in London, February 9, 1875. Appointed to Westminster Abbey in 1918, resigning in 1927 to found the School of English Church Music, at St. Nicholas' College, Chislehurst.

**Nicolai, Otto** (1810–1849). Composer and organist. Born at Könisberg; died in Berlin. Wrote Church music and operas. Best known as the composer of "The Merry Wives of Windsor."

**Niecks, Frederick.** Writer. Born at Düsseldorf in 1845. For many years resident in Dumfries as a teacher. Was Reid Professor of Music in Edinburgh University. Wrote a " Life of Chopin," &c. Died Edinburgh, June 24, 1924.

**Nikisch, Artur** Hungarian conductor. Born at Lébény Szent Miklos, October 12, 1855; died at Leipzig, January 23, 1922. A conductor and accompanist of unusual distinction.

**Novello, Vincent** (1781–1861). Composer and organist. Born in London; died at Nice.

**Oakeley, Sir Herbert Stanley.** Composer, pianist, and organist. Born at Ealing in 1830. Educated at Rugby, and at Christ Church, Oxford. Studied music under Moscheles and Plaidy at Leipzig, and under Schneider at Dresden. Succeeded Professor Donaldson in the Chair of Music at Edinburgh University in 1865, and from that time, until his resignation in 1891, did good work in the cause of musical art in Scotland, materially assisting in fostering the taste for orchestral music of the highest class, by the institution of an annual " Reid Festival," and also contributing largely to the growth of musical culture by his labours in connection with the University Musical Society, which he founded in Edinburgh, an example followed, with his assistance, by the other Scottish Universities. Died at Eastbourne in 1903.

**Offenbach, Jacques** (1819–1880). Composer. Born at Cologne; died in Paris. Wrote a number of successful comic operas—" La Fille du Tambour major," " Orphée aux Enfers," " La Belle Hélène," &c.

**O'Neill, Norman.** English composer and conductor. Born in London, March 14, 1875. Has written much admirable incidental music for stage. Died, March 3, 1934.

**Ouseley, Sir Frederick Arthur Gore, Bart. (Rev.)** (1825–1889). Composer and organist. Born in London. Wrote music when only eight years old. In 1855 succeeded Sir H. Bishop as Professor of Music at Oxford. Wrote a large amount of Church music; also treatises on " Harmony," " Counterpoint," &c.

**Pachmann, Vladimir de.** A famous pianist. Born at Odessa, in 1848; died, January 6, 1933, at Rome.

**Paderewski, Ignace Jan.** One of the greatest of pianists, and a composer of distinction. Born at Podolia in 1860.

**Paganini, Nicolo** (1784–1840). Violinist and composer. Born at Genoa. Self-taught. His immense command of the resources of his instrument, combined with a very remarkable appearance and manner, and an inherent love of secrecy and mystery, caused many people to regard Paganini as a species of goblin or demon, and books might be filled with the uncanny traditions which have gathered round the memory of this wonderful man. He left behind him a number of compositions for the violin, full of tremendous technical difficulties.

**Palestrina, Giovanni Pierluigi da** (1515–1594). Composer. Born at Palestrina. Belonged to the Papal choir *temp.* Julius III, and afterwards became Maestro di Cappella of St. Peter's. He wrote over 250 motets, 45 hymns, 68 offertories, 92 masses, 17 Litanies, 35 Magnificats, 150 madrigals, &c. His music touches a point of purity and sublimity rarely achieved in the history of the art. Died in Rome.

**Paradies, Pietro Domenico** (1710–1792). Composer. Born in Naples; died at Venice.

**Parratt, Sir Walter.** Composer and organist. Born at Huddersfield, 1841. Organist, St. George's Chapel, Windsor; Master of the King's Musick; Professor of Music, Oxford University. Chief Professor of the Organ at the Royal College of Music. Died at Windsor, March 27, 1924.

**Parry, Sir Charles Hubert Hastings.** Composer. Born at Bournemouth, in 1848. Studied under Sir George Elvey, Macfarren, Sterndale, Bennett, and Dannreuther. Took degree of Mus. Bac. while at school at Eton. In 1883 appointed Professor of Composition in the Royal College of Music. Director of the Royal College of Music from 1894 till his death (October 7, 1918). Oxford Musical Professor, 1901–1907. Played an important part in the renaissance of English music. Of his many works his choral writings stand out, especially "Blest Pair of Sirens," "Job," and a large number of short unaccompanied pieces, such as the "Songs of Farewell," &c., written shortly before his death. He made some notable contributions to musical literature in his "Studies of the Great Composers," "The Art of Music," "Johann Sebastian Bach," &c.

**Patti, Adelina.** Famous soprano. Born at Madrid in 1843. Died at Craig-y-Flos, S. Wales, September 27, 1919.

**Patti, Carlotta** (1840–1889). Soprana vocalist. Sister of Adelina Patti. Born at Florence; died in Paris.

**Pauer, Ernst.** Composer and pianist. Born in Vienna in 1826. A pupil of Theodor Dirzka and W. A. Mozart (1791–1844) for piano, and of Franz Lachner for composition. For many years resided in London. Edited numerous works of the classical composers, wrote books on musical subjects, and composed pianoforte pieces, &c. Died 1905.

**Pearsall, Robert Lucas de** (1795–1856). Composer. Born at Clifton; died at Wartensee. Wrote a large number of admirable madrigals, part-songs, &c.

**Pepusch, Johann Christoph** (1667–1752). Composer and organist. Born in Berlin; died in London.

**Pergolesi, Giovanni Battista** (1710–1736). Composer. Born at Jesi, near Ancona; died at Pozzuoli. A student of Naples Conservatoire. Wrote operas, and latterly Church music. His best work is the "Stabat Mater," completed a few days before his death.

**Peri, Jacopo** (15— –1610). Composer, vocalist, and lutist. Born and died in Florence.

**Pfitzner, Hans.** Composer and conductor. Born at Moscow, May 5, 1869, of German parents.

**Piatti, Alfredo.** Violoncellist and composer. Born at Bergamo, in 1822; died 1901.

**Piccini, Nicolo** (1728–1800). Composer. Born at Bari; died at Passy. Gluck's rival in Paris.

**Pierson, Henry Hugo** (1815–1873). Composer. Born at Oxford; died in Leipzig. Settled in Germany. His principal work is the oratorio "Jerusalem," produced at the Norwich Festival of 1852.

**Pijper, Willem.** Dutch composer and pianist. Born at Zeist (Utrecht), September 8, 1894.

**Pitt, Percy.** English composer and conductor. Born in London, January 4, 1870. Did much operatic and orchestral conducting. Chief musical director to the B.B.C. from 1922 to 1930. Died, November 23, 1932.

**Pizetti, Ildebrando.** Italian composer. Born at Parma, September 20, 1880.

**Planquette, Robert.** Composer. Born in Paris in 1850; died there, 1903. Wrote a number of comic operas.

**Pleyel, Ignaz Josef** (1757–1831). Composer. Born at Ruppertsthal, near Vienna; died in Paris.

**Popper, David.** Composer and violoncellist. Born at Prague in 1845. In 1868 became solo violoncellist at the Court Opera in Vienna. Died at Baden, 1913.

**Porpora, Niccolo** (1686–1767). Composer. Born and died in Naples.

**Potter, Philip Cipriani** (1792–1871). Composer and pianist. Born and died in London. Was made Principal of the Royal Academy of Music in 1832.

**Prokofief, Serge Sergevitch.** Russian composer. Born at Solnzevo, April 11, 1891.

**Prout, Dr. Ebenezer.** Composer and writer. Born at Oundle, in Northamptonshire, in 1835. Both as a composer and as a writer upon musical subjects attained to a wide celebrity. Was for some years editor of the *Monthly Musical Record*, and afterwards successively musical critic of the *Academy* and the *Athenæum*. Held Professorships, Royal Academy of Music and Trinity College, Dublin. Died London, December 5, 1909.

**Pulver, Jeffrey.** English violinist and writer. Born in London, June 22, 1884. Has done valuable research work in connection with old English music and instruments.

**Purcell, Henry** (1658–1695). Composer and organist. Born and died in Westminster. One of a family of musicians. Educated in the Chapel Royal. Afterwards copyist and organist of Westminster Abbey, and, later, organist of the Chapel Royal. Wrote anthems, &c., while still a choir-boy. Wrote the operas "Dido and Æneas," "King Arthur," "Diocletian," "The Fairy Queen," &c.; incidental music to a number of plays; songs, sonatas, odes, Church music, &c.

**Quilter, Roger.** English composer. Born at Brighton, November 1, 1877. Has written excellent instrumental music ("Children's Overture," &c.), but is specially successful as a song composer.

**Rachmaninoff, Sergei Vassilievitch.** Russian composer and pianist. Born at Onega, March 19, 1873. A prolific composer in almost every department, he is best known by his effective pianoforte solos.

**Radford, Robert.** English bass. Born at Nottingham, May 13, 1874. One of the founders and directors of the British National Opera Company. Died, March 1, 1933.

**Raff, Joseph Joachim** (1822–1882). Composer. Born at Lachen, on the Lake of Zurich. Was for some years a schoolmaster before devoting himself to music. Wrote five symphonies (chief among them "Der Wald" and "Leonore" symphonies), operas, overtures, chamber-music, songs, &c. Died at Frankfurt.

**Rameau, Jean Philippe** (1683–1764). Composer, organist, and writer. Born at Dijon; died in Paris.

**Ranalow, Frederick Baring.** Irish baritone. Born at Kingstown, November 7, 1873. Made a notable success as Macheath in a revival of the "Beggar's Opera."

**Ravel, Maurice.** French composer. Born at Ciboure (Pyrenees), March 7, 1875. His string Quartet in F, the suite, "Mother Goose," and many pianoforte pieces have established his fame. Has done much in the development of the technical and tonal resources of pianoforte playing.

**Rébikoff, Vladimir Ivanovitch.** Russian composer. Born at Krasnoyarsk, Siberia, May 19, 1866.

**Reeves, John Sims.** Tenor vocalist. Born at the Artillery Barracks, Woolwich, in 1818; died 1900. At fourteen years of age became organist of North Cray Church, Kent. Appeared as a singer at Newcastle-on-Tyne Theatre in 1839, and speedily established himself as a leading English vocalist, whether in opera, oratorio, or ballad.

**Reger, Max.** German composer. Born at Brand (Bavaria), March, 19, 1873; died at Leipzig, May 11, 1916. One of the most productive of modern composers, his published works numbering about 150, many of large scale. His most enduring compositions will probably prove to be those for the organ which, unequal as they are, contain some magnificent music.

**Reinecke, Carl.** Composer, pianist, and conductor. Born at Altona in 1824. In 1860 was appointed conductor at the Gewandhaus, and teacher at the Conservatoire, Leipzig. Died March 10, 1910.

**Respighi, Ottorino.** Italian composer. Born at Bologna, July 9, 1879.

**Reszke, Edouard de.** Polish bass. Born at Warsaw, December 23, 1855; died at Gureck (Poland), May 25, 1917.

**Reszke, Jean de.** Tenor; brother of above. Born at Warsaw, January 4, 1850. Began by singing as a baritone. In 1905 founded an operatic school in Paris. Died, April 3, 1925.

**Rheinberger, Joseph Gabriel.** German composer. Born at Vaduz, Lichtenstein, March 17, 1839; died at Munich, November 25, 1901. Left a great mass of compositions in every form, but is now known mainly through his admirable organ works (twenty sonatas, and about 100 shorter pieces). One of the greatest teachers and contrapuntists of his day.

**Richter, Dr. Hans.** One of the greatest of conductors. Born at Raab in 1843. Died at Bayreuth, December 5, 1916.

**Ries, Ferdinand** (1784–1838). Composer and pianist. Born at Bonn; died at Frankfurt. A pupil of Beethoven.

**Rimbault, Edward Francis** (1816–1876). Composer, organist, and writer. Born at Westminster; died in London. A distinguished musical historian and archæologist. Assisted in the formation of the Musical Antiquarian and Percy Societies. Edited a great deal of ancient music.

**Rimsky-Korsakov, Nicolas Andreievitch.** Russian composer. Born at Tikhvin, March 6, 1844; died at Liubensk, June 8, 1908. Composed many operas ("Jadko," "The Golden Cockerel," etc.), "Scheherazade," and other suites. Was one of the most brilliant of orchestrators, and in this and other respects has greatly influenced European composers.

**Roberton, Hugh, S.** Scottish choral trainer and conductor. Self-taught. Organised the Glasgow Orpheus Choir, and made it world-famous. Knighted in 1931.

**Roger-Ducasse.** French composer. Born at Bordeaux in 1875.

**Ronald, Landon.** English conductor and composer (real name Russell). Born June 7, 1873. Son of Henry Russell, a well-known singer and song-writer in his day. Ronald first distinguished himself as a pianist and accompanist. Appointed Principal, Guildhall School of Music in 1910. Knighted in 1922.

**Rosa, Carl August Nicolas** (1842–1889). Violinist. Born at Hamburg. Appeared in public as a violinist when eight years old. Studied at Leipzig and in Paris. Travelled in America as a solo violinist. In 1867 married Euphrosyne Parepa, and started the well-known Carl Rosa Opera Company, now one of the most important musical institutions in the country. Died in Paris.

**Rosenthal, Moritz.** Polish pianist. Born at Lemberg, December 18, 1862. A player of the first rank.

**Rossini, Gioachino Antonio** (1792–1868). Composer. Born at Pesaro, in the Romagna. At seven years of age appeared in Paer's opera "Camilla." When fourteen, became musical-director of a travelling company. In 1807 entered the Lyceum at Bologna to study composition. After leaving the Lyceum wrote a great number of more or less successful operas. The production of "Tancredi" in 1813 marks the beginning of Rossini's European reputation. Between 1813 and 1829 he wrote a succession of brilliantly successful operas, finishing his career as an operatic composer in the latter year with "William Tell," his best work. After 1829 the only composition he produced was his "Stabat Mater." Died in Paris in 1868.

**Rootham, Cyril Bradley.** English organist, composer, and conductor. Born at Bristol, October 5, 1875. Organist, St. John's College, Cambridge from 1901; University Lecturer, 1913.

**Rubinstein, Anton Gregor** (1830–1894). Composer and pianist. Born at Wechwolynetz, near Jassy. Made a number of highly successful concert-tours, and latterly resided in St. Petersburg, where he was director of the Conservatoire. As a pianist, could be considered as second only to Liszt. Wrote symphonies (the "Ocean" and "Richard III"), operas, chamber music, &c.

**Rubinstein, Arthur.** Polish pianist. Born at Lódz, 1886. A brilliant interpreter of modern music.

**Rubinstein, Nicolas** (1835–1881). Composer and pianist. Born at Wechwolynetz. Lived at Moscow as director of the Conservatoire. An excellent musician, but owing to his dislike to concert tours, little known outside Russia. Died in Paris.

**Russell, Henry.** Composer and vocalist. Born at Sheerness, 1812; died 1900. Wrote "Cheer, boys, Cheer," and kindred popular songs.

**Rust, Friedrich Wilhelm** (1739–1796). Composer. Born at Wörlitz; died at Dessau.

**Sachs, Hans** (1494–1576). Poet and composer. Born and died in Nuremberg.

**Sainton-Dolby, Charlotte Helen** (1821–1885). Contralto vocalist and composer. Born and died in London.

**Sainton, Prosper Philippe** (1813–1890). Violinist and composer. Born at Toulouse. Studied at the Paris Conservatoire under Habeneck. After an extensive European concert tour settled in England, and in 1845 was made Professor of the Violin at the Royal Academy of Music. Died in London.

**Saint-Saëns, Charles Camille.** Composer, organist, and pianist. Born in Paris in 1835. Evinced promise of great musical talent at an early age, and rapidly acquired a reputation as a brilliant pianist and organist. Has written a number of operas ("Samson et Delila," "Etienne Marcel," "Henry VIII," "Ascanio," &c.), three symphonies, orchestral suites, symphonic poems, concertos, chamber music, &c. Died at Algiers, December 16, 1922.

**Salieri, Antonio** (1750–1825). Composer. Born at Legnano. Wrote operas, Church music, chamber music, &c. Died at Vienna.

**Salomon, Johann Peter** (1745–1815). Composer and violinist. Born at Bonn; died in London. It was Salomon who induced Hadyn to visit England.

**Sammons, Albert Edward.** English violinist. Born in London, February 23, 1886.

**Samuel, Harold.** English pianist. Born in London, May 23, 1879. Has specialised as a Bach player, but is admirable in all schools.

**Santley, Sir Charles.** One of the greatest of baritones. Born at Liverpool in 1834. Died September 22, 1922.

**Sapellnikoff, Vassily.** Russian pianist and composer. Born at Odessa, October 21, 1872.

**Sarasate, Pablo Martin Meliton y Navascues.** Violinist and composer. Born at Pampeluna in 1844. Died at Biarritz, September 20, 1908.

**Sarti, Giuseppe** (1729–1802). Composer and organist. Born at Faenza; died in Berlin.

**Satie, Erik Leslie.** French composer (his mother was English). Born at Honfleur, May 17, 1866; died in July 1925. Though meeting with little recognition (partly owing to an oddly humorous twist in his character) he had considerable influence on modern French composers.

**Sauer, Emil.** German pianist and composer, Born at Hamburg, October 8, 1862.

**Sauret, Emile.** Composer and violinist. Born at Dun-le-Roi in 1852.

**Scarlatti, Alessandro** (1659–1725). Composer. Born at Trapani. The father of Italian Opera. Died at Naples.

**Scarlatti, Domenico** (1683–1757). Composer and harpsichordist. Born at Naples; died at Madrid.

**Scharwenka, Xaver.** Pianist and composer. Born at Samter (Posen), January 6, 1850. Opened Conservatoire at Berlin in 1881, which afterwards amalgamated with Klindworth Conservatoire, became famous.

**Schelling, Ernest Henry.** American pianist and composer. Born at Belvedere, N.J., July 26, 1876.

**Schmitt, Florent.** French composer. Born at Blamont, September 28, 1870.

**Schönberg, Arnold.** Austrian composer. Born in Vienna, September 13, 1874. His later works have caused much disputation by their complexity and dissonance.

**Schubert, Franz Peter** (1797–1828). Composer. Born and died in Vienna. When eleven years old entered the Imperial Convict (free school) at Vienna as a choir boy, and also played the violin in the school orchestra. In 1813 he left the " Convict " and devoted himself to the study of music at home, meanwhile assisting in his father's school. Later he was for two years singing and pianoforte master in the house of Count Esterhazy, and thereafter spent the remainder of his life principally in Vienna. One of the most gifted and fertile of musical composers. Wrote some 15 operas and operettas, 5 masses and other church music, 9 symphonies, 15 string quartets, besides other chamber and pianoforte music, and 600 songs. He lived almost wholly unappreciated, and died poor.

**Schumann, Clara Josephine.** Composer and pianist. Born at Leipzig in 1819. A pupil of her father, Frederick Wieck. Made a tour as a pianoforte *virtuoso* in her eleventh year. Later, was the first to introduce Chopin's music to the German public. In 1840 married Robert Schumann.

**Schumann, Elizabeth.** Austrian operatic soprano. Born at Merseburg (Thuringia).

**Schumann, Robert Alexander** (1810–1856). Composer and pianist. Born at Zwickau. Originally a law student, but interested himself solely in music, and soon adopted it as his profession. An injury to one of his fingers obliged him to abandon the pianoforte for composition. In 1834 went to Dresden as conductor of the Choral Union, and in 1847 removed to Düsseldorf. Here, however, a long-standing affection of the brain became rapidly worse, and in 1854 Schumann had to be placed in an asylum at Endenich, near Bonn, where he died. Schumann wrote choral works (" Paradise and the Peri," " Pilgrimage of the Rose," " Faust," " Genoveva "), symphonies, chamber music, pianoforte compositions, and a great number of vocal works, all marked by a great depth and sincerity of design and a wonderful grasp of a wide range of expression and sentiment.

**Scott, Charles Kennedy.** English choral conductor and composer. Born at Romsey, November 16, 1876. Founded Oriana Madrigal Society, 1904, Philharmonic Choir, 1919. By his skilful training and fine programmes has done much to raise the standard of choralism in London.

**Scott, Cyril Meir.** English composer. Born at Oxton, Cheshire, September 27, 1879. Of his large output his best-known works are songs and pianoforte pieces.

**Scriabin, Alexander Nicolaevitch.** Russian composer. Born at Moscow, 1871; died 1915. His orchestral works, " Prometheus," " Poème de l'Extase," and " Le Divin Poème " have been widely played, but their vogue does not appear to be lasting. His pianoforte works, especially the smaller ones (in which the influence of Chopin is very pronounced), will probably outlive them. Scriabin was a fine pianist, and excelled as a player of his own music.

**Sevcik, O. Josef.** Distinguished teacher of the violin. Born in Bohemia, 1852.

**Shakespeare, William.** Tenor vocalist, and successful teacher of singing. Born at Croydon in 1849.

**Sharp, Cecil James.** Collector and arranger of English folk-songs and dances. Lectured and wrote extensively on the subject. Born in London, November 22, 1859; died there June 22, 1924.

**Shaw, Geoffrey Turton.** English composer. Born in London, November 14, 1879. H.M. Inspector of Music in Secondary Schools. Distinguished as lecturer and adjudicator.

**Shaw, Martin.** English composer. Born in London, March 9, 1876. Has written much admirable music, chiefly vocal. At his best, a song composer of distinction.

**Shield, William** (1748–1829). Composer and violinist. Born at Swalwell; died in London. Composed the music of a number of ballad operas, which enjoyed great popularity.

**Sibelius, Jean.** Finnish composer. Born at Tavastehus, December 8, 1865. One of the most distinguished of modern composers. He has written many fine orchestral works, including six symphonies. In all his music the influence of nature, in the stern aspects of his native country, is strong.

**Silk, Dorothy.** English soprano. Born at Moseley, Birmingham. Distinguished in Bach and Purcell, and other old composers, and in music of an intimate type.

**Smart, Sir George Thomas** (1776–1876). Composer and organist. Born and died in London.

**Smart, Henry** (1813–1879). Composer and organist. Born and died in London.

**Smetana, Friedrich** (1824–1884). Composer. Born at Leitonieschel; died at Prague. Wrote a number of orchestral works, strongly reflecting the national spirit of the Bohemians ("Mein Vaterland," &c.). He also wrote operas ("Die Brandenburger in Böhmen," "Dalibor," "Der Kufz," and "Die Verkaufte Braut").

**Solomon.** English pianist. Born in London in 1903.

**Somervell, Sir Arthur.** Composer and Government Inspector of Music. Born at Windermere, 1863.

**Spitta, Julius August Philipp.** Writer. Born at Wechold, in 1841; died at Berlin, 1894. Author of a monumental "Life of Bach."

**Spohr, Louis** (1784–1859). Composer and violinist. Born at Brunswick. Acquired his remarkable knowledge of harmony and counterpoint almost entirely by his own unaided exertions. Made many concert tours, and soon became recognised as the first of living violinists. After holding various other appointments, was made Court Capellmeister at Cassel, in 1822. Here he wrote one of his best works, the opera "Jessonda." Spohr wrote 8 operas, 5 oratorios, 9 symphonies, 43 quartets, 5 quintets, 5 double quartets, duets for two violins, violin concertos, many songs, &c. Musical art is most deeply indebted to him, however, as the virtual founder of the modern school of violin-playing. Died at Cassel.

**Spontini, Gasparo Luigi Pacifico** (1774–1851). Composer. Born and died at Majojati, Ancona. Studied at Naples. Wrote operas—"La Vestale," "Ferdinand Cortez," etc.

**Stainer, Sir John.** Composer and organist. Born in London in 1840. Appointed organist to St. Michael's College, Tenbury, in 1857; and to Magdalen College, Oxford, in 1860. In 1872 became organist of St. Paul's Cathedral. Was Juror in music, for England and the Colonies, at the Paris Exhibition of 1878. In 1883 succeeded Dr. Hullah as Inspector of Training Colleges (Music). Professor of Music at Oxford, 1889–99. Died 1901.

**Stanford, Sir Charles Villiers.** Composer and organist. Born in Dublin in 1852. Studied music under Sir Robert Stewart, and Mr. Michael Quarry at Dublin, under Reinecke at Leipzig, and Kiel at Berlin. Was appointed organist of Trinity College, Cambridge, and Conductor of Cambridge University Musical Society in 1873. In 1883 was appointed Professor of Composition, and Conductor of the Orchestral Class at the Royal College of Music. A composer of extraordinary versatility, he wrote operas ("Veiled Prophet," "Savonarola," "The Critic," &c.), oratorios ("Eden," "Stabat Mater," &c.), cantatas ("The Revenge," "Phandrig Crohoove," "The Last Post," &c.), orchestral, organ, and chamber music, and many songs and part-songs. His arrangements of Irish airs are unsurpassed. He was a great teacher, and a large proportion of the younger generation of English composers were among his pupils. He died in London, March 29, 1924.

**Stewart, Sir Robert Prescott** (1825–1894). Composer and organist. Born and died in Dublin. Professor of Music in Trinity College, Dublin.

**Storace, Stephen** (1763–1796). Composer. Born and died in London.

**Strauss, Johann** (1804–1849). Composer. Born and died in Vienna. The head of the celebrated Strauss family, whose matchless dance music charmed Europe for the greater part of a century.

**Strauss, Richard.** German composer. Born at Munich, June 11, 1864. One of the most prominent figures in modern music. A master of orchestration. His most notable works are "Ein Heldenleben," "Don Juan," "Also Sprach Zarathustra," "Don Quixote," "Salome," "Elektra." "Till Eulenspiegel" (an early work) is perhaps the one with the widest appeal and the most likely to live. His later works, the "Domestic" and "Alpine" Symphonies, showed a falling-off.

**Stravinsky, Igor Fedorovitch.** Russian composer. Born at Oranienbaum, June 5, 1882. Perhaps the most heatedly-discussed of modern composers. There is, however, general agreement as to the genius shown in the "Firebird" and "Petrouchka" ballets. His latest works, with their extreme dissonance and deliberate avoidance of emotional appeal, have failed to convince the majority of musicians.

**Suggia, Guilhermina.** Violoncellist. Born at Oporto, June 27, 1888.

**Sullivan, Sir Arthur Seymour.** Composer. Born in London, 1842; died there, 1900. A choir-boy at the Chapel Royal. When fourteen won the Mendelssohn Scholarship. Studied under Sterndale Bennett and Goss, and afterwards spent three years at Leipzig. Attracted great attention, shortly after his return from Leipzig, by his music to "The Tempest." Achieved a world-wide success with his comic operas. Wrote also the cantata "Kenilworth," the oratorios "The Prodigal Son," "The Martyr of Antioch," and "The Golden Legend"; a festival "Te Deum"; overtures, a symphony, songs, &c.

**Suppé, Franz von.** Composer. Born at Spalatro in 1820. Died 1895.

**Tartini, Giuseppe** (1692–1770). Composer and violinist. Born at Pirano, in Istria. In 1728 founded his famous Violin School at Padua, where he died.

**Tausig, Carl** (1841–1871). Composer and pianist. Born at Warsaw; died at Leipzig. Liszt's greatest pupil.

**Tchaikovsky, Peter Iljitsch** (1840–1893). Composer. Born at Wotkinsk. Studied at the St. Petersburg Conservatoire, and also in Germany. Was for twelve years Professor of the Theory of Music at Warsaw Conservatoire. Wrote symphonies, operas ("Le Voïvode," "Vakoul le Forgeron," &c.), orchestral music, songs, &c. He remains the most prominent of Russian composers, and the best of his orchestral music has come safely through the test of being considerably overplayed for some years.

**Terry, Richard Runciman.** English organist. Born at Ebington, Northumberland, 1865. Organist and choirmaster, Westminster Cathedral, 1901–24. Did fine work in the revival of English polyphonic composers of the sixteenth century. Knighted in 1922.

**Tertis, Lionel.** English viola-player. Born at West Hartlepool, December 29, 1876. Began his career as a violinist, but was later attracted to the viola, and has since done much to establish it as a solo instrument.

**Tetrazzini, Luisa.** Italian operatic soprano. Born at Florence, June 29, 1871.

**Thayer, Alexander W.** Writer. Born at Boston, U.S.A., 1817; died at Trieste, 1897. Author of "Life of Beethoven."

**Thibaud, Jacques.** French violinist. Born at Bordeaux, September 27, 1880.

**Thomas, Arthur Goring** (1851–1892). Composer. Born at Ratton.

**Thomas, Charles Ambroise** (1811–1896). Composer. Born at Metz. Wrote operas ("Mignon," "Hamlet," &c.), Church music, chamber music, pianoforte pieces, &c.

**Tietjens, Therese Caroline Johanna** (1831–1877). Soprano vocalist. Born at Hamburg; died in London.

**Toscanini, Arturo.** Famous Italian conductor. Born at Parma, March 25, 1867.

**Tovey, Donald Francis.** English composer, pianist, and conductor. Born at Eton, July 17, 1875. Appointed Reid Professor of Music at Edinburgh University in 1914. One of the most acute and distinguished of modern critical and analytical writers.

**Trebelli, Zelia** (1838–1892). Contralto vocalist. Born in Paris; died at Etretat.

**Trotter, Thomas Henry Yorke.** English teacher, lecturer, and writer on music. Born November 6, 1854. Principal, London Academy of Music from its inception about 1900. Died, March 11, 1934.

**Van den Borren, Charles Jean Eugène.** Belgian musicologist. Born at Ixelles, near Brussels, November 17, 1874. Has written much on early music, and was one of the first to make widely known the part played by Byrd and other English composers in the development of keyboard technique. ("The Sources of Keyboard Music in England," Novello, 1913.)

**Vaughan Williams, Ralph.** English composer. Born at Down Ampney, Glos., October 12, 1872. His first considerable success was gained by his work for chorus and orchestra, "Towards the unknown region" (Walt Whitman). A few years later he drew on the same poet for a text for his "Sea Symphony," which further enhanced his reputation. Since then he has steadily made his way to the front rank of contemporary composers, with two symphonies ("London" and "Pastoral"), piano concerto, a ballet "Job," many songs, and a mass in G minor in which an antique idiom was used with convincing and beautiful results. His music bears many traces of the melodic, rhythmic, and modal influence of folk-song and plain-song.

**Verdi, Giuseppe.** Composer. Born at Le Roncole, near Parma, in 1813; died at Milan, 1901. Studied at Milan. Gained a great reputation by his operas, "Ernani," "Rigoletto," "Trovatore," "La Traviata," "Aïda," &c.; all of which have enjoyed an immense vogue. Verdi ranks as the greatest modern Italian composer, and one of the most prominent musicians of the nineteenth century. One of his finest works was the opera "Falstaff," written when he was eighty.

**Vierne, Louis Victor Jules.** French organist and composer. Born at Poitiers, October 8, 1870. Organist of Notre Dame, Paris; composer of six symphonies and other works for the organ, besides much chamber and choral music.

**Vieuxtemps, Henri** (1820–1881). Composer and violinist. Born at Verviers, in Belgium. Died at Mustafalez-Alger.

**Viotti, Giovanni Battista** (1753–1824). Composer and violinist. Born at Fontanetto, in Piedmont. Spent the latter part of his life in London, where he died.

**Wagner, Wilhelm Richard** (1813–1883). Composer and writer. Born at Leipzig. While studying at the university there, also worked at music. Producing an overture and a symphony, which were successfully performed at the Gewandhaus, he next wrote an opera, "Die Feen." In 1836 he conducted a performance of his next opera, "Das Liebesverbot," at Magdeburg, where he was musical director of the theatre. After a short time spent at Königsberg and Riga, Wagner went to Paris, in the hope that he might get an opera produced there. In Paris he completed "Rienzi" and "The Flying Dutchman." Although unsuccessful in Paris, Wagner met with good fortune in Dresden, where a performance of "Rienzi," in 1842, resulted in his appointment as Capellmeister. In 1845 he produced "Tannhäuser," and also wrote "Lohengrin." Becoming involved in the revolution at Dresden in 1849, he was obliged to take refuge in Weimar, and afterwards in Paris, whence he went to Zurich. At Zurich he projected the great "Nibelungen" cycle of operas, and also "Tristran und Isolde." After an extensive musical tour, Wagner went to Munich, where "Tristran und Isolde" and "Die Meistersinger" were produced, in 1868. The crowning point in Wagner's life, however, was the performance of the "Nibelungen" cycle at Bayreuth in 1876. "Parsifal" appeared in 1882; and a year later Wagner died at Venice.

**Walker, Ernest.** English composer and writer. Born at Bombay, July 15, 1870. Lecturer in harmony, University of Oxford.

**Wallace, William.** Scottish composer and writer. Born at Greenock, July 3, 1860. A singularly versatile man, he graduated M.D. for research in ophthalmology; has composed with success, chiefly for orchestra; is an admirable artist, and in his set of "Freebooter Songs" he not only wrote words and music, but also illustrated the cover. Author of several standard works on music.

**Wallace, William Vincent** (1814–1865). Composer, pianist, and violinist. Born at Waterford. Composer of "Maritana" and other operas. Died at Château de Bagen, in the Pyrenees.

**Walthew, Richard Henry.** English composer. Born in London, November 4, 1872. Has composed many admirable works, especially in the department of chamber music.

**Warlock, Peter** (Philip Heseltine). English composer, writer, and editor. Born, October 30, 1894. One of the most distinguished of modern song composers. Has also done much valuable research work in connection with Tudor and Elizabethan song-writers. Died, December 17, 1930.

**Weber, Carl Maria von** (1786–1826). Composer. Born at Eutin, in Holstein. In 1800 his first opera, "Das stumme Waldmädchen," was performed at Chemnitz. In 1804 he went to Breslau, where he commenced an opera, entitled "Rübezahl," the overture to which figures in programmes as "Ruler of the Spirits." After a very unsettled life, he at length achieved a decided success at Leipzig as pianist and composer, and was made conductor of the Opera at Prague. Later, he settled in Dresden, where he wrote the operas ("Preciosa," "Freischütz," "Euryanthe," and "Oberon") which have made his name famous. He also wrote Church and chamber music. Weber died in London, whither he had come to superintend the production of "Oberon."

**Weingartner, Felix.** German conductor and composer. Born at Zara (Dalmatia), June 2, 1863.

**Whittaker, William Gillies.** English composer, conductor, and educationist. Born at Newcastle-on-Tyne, July 23, 1876. Director of Music at Armstrong College. Founded Newcastle Bach Choir, which has done much fine work in performing new British music, as well as rescuing from neglect many of the Church cantatas of Bach. Appointed Principal of Scottish National Academy of Music, and Professor at Glasgow University, 1930.

**Widor, Charles Marie.** Eminent French organist and composer. Born at Lyons, 1845.

Wrote works for stage; orchestral and chamber music; and ten symphonies for organ. His fame will probably rest on these last-named works.

**Wieniawski, Henri** (1835–1880). Composer and violinist. Died at Moscow.

**Wilhelmj, Auguste Emil.** Composer and violinist. Born in Nassau, in 1845; died 1908.

**Williams, Gerrard.** English composer. Born in London, December 10, 1888. Trained as an architect, and mainly self-taught as a musician. Writer of delightful works of small scale and intimate character.

**Wolf, Hugo.** Austrian composer. Born at Windischgräz, March 13, 1860; died in Vienna, February 22, 1903. One of the greatest of all song-composers.

**Wolstenholme, William.** Famous blind organist and composer. Born at Blackburn, 1865. Though he has a good number of pianoforte and chamber works to his credit, Wolstenholme was at his best in his organ music, which comprises nearly a hundred pieces. A gifted improviser. Died, July 23, 1931.

**Wood, Charles.** Irish composer. Born at Armagh, June 15, 1866; died at Cambridge, July 12, 1926. Succeeded Stanford as Cambridge Professor of Music in 1924. A distinguished and scholarly composer, chiefly of choral and chamber music, and one of the best teachers of his generation.

**Wood, Henry Joseph.** Eminent English conductor. Born in London, 1870. Probably no musician has done more than Wood in familiarising the general public with fine music. With Robert Newman he started in 1895 the Promenade Concerts, at Queen's Hall, which continued without break for over thirty years. He has also done much conducting at provincial Festivals, and in 1925 and in subsequent years accepted invitations to conduct series of concerts in America. Knighted in 1911.

**Ysaÿe, Eugene.** Composer and violinist. Born at Liège, in 1858; died, 1931.

## CHAPTER VI

# ACOUSTICS

Acoustics [Gr. *ἀκόυειν*—to hear] is the science which inquires into the nature of Sound.

It would be neither possible nor desirable to attempt, in the course of a dictionary article, to provide students with a complete treatment of the subject. The aim of the present writer is to show the general reader that the subject of Acoustics, when stripped of its more mathematical and scientific aspects, is of interest to musicians and is not difficult of apprehension.

Sound is the raw material of music; without it the Art could not exist. As soon as human beings became interested in music they found that it was desirable to inquire into the properties of noises. Some were led to this investigation, no doubt, simply because certain minds are inquisitive and enjoy probing into the reasons for things. But even the more practical-minded soon discovered that it was necessary to discriminate between noises, some being apparently suitable for musical use, others seeming to be outside the range of artistic utility. Further, when the available material was commonly agreed upon, it was necessary to understand its nature in order to systematise methods of producing it. Hence the understanding of the nature of Sound, though nowadays possibly a side-issue in the education of a musician, was at one time a matter of urgency, since without such understanding no progress could have been made in such essential matters as the construction of scales and the invention of musical instruments.

### THE DIVISIONS OF THE SUBJECT.

Human beings are endowed with five senses; and through these " five gateways " all contact with the outer world is made. If you could neither see, feel, hear, taste, nor smell, you would be entirely isolated and cut off from all communication with your fellow-man.

The psychologist has invented a useful nomenclature for the events as they occur in chronological order when one of your senses is employed. Something outside of yourself brings one of your senses into play. It may be a sudden flash of light, a shout, an onion, or a fly on your nose. Whatever it is, it is called a *Stimulus*, and it gives you a *Sensation*. Your senses telegraph their impressions to the brain, through the nervous system, and you then possess a *Perception* of the particular thing experienced; the data provided by the brain set you thinking and your *Concepts* complete the chain. If you strike a chord on the piano the strings vibrate, and the vibrations are transmitted through the air to your ear; that is the Stimulus. Your ear receives the Sensation of sound. It registers that sensation in your brain, and you Perceive it. Any remark that may occur to you—such as, that it is the chord of C major, but the piano wants tuning—is at once entering the realm of Concepts.

A moment's thought will show that, since every apprehension of Sound conforms to the above description, Acoustics naturally divides itself into a threefold process. There is (1) the *Origin* of the Sound—in the case given, the piano; (2) the *Transmission* from the origin to the ear, and (3) the *Reception* by the ear. Our inquiry will be almost entirely confined to (1), since it embraces nearly all in the subject that is of practical importance to musicians.

## FACTS ABOUT THE ORIGIN.

All sound is due to vibrations. Wherever any sound has ever been heard in the world it must invariably have been due to the fact that some body had oscillated rapidly to and fro, that these oscillations or vibrations had been transferred to a medium (generally, though not always, the air), and that finally an auditory apparatus had reacted to the stimulus.

In the above fact there is a corollary which often proves a stumbling-block to students untrained in scientific or philosophical conceptions. It is the fact that the *only* thing the " origin " does is to vibrate, and that no *sound* occurs until an ear has conveyed those vibrations to a brain. If you place a maroon on the ground, and a number of people form a circle round it at a radius of fifty yards, then the sound of the explosion will be, not at the centre of the circle, but in various heads fifty yards away from it. Many students accept such a statement without fully realising its implications. If you turn on the gramophone in your drawing-room and then go outside, leaving the room empty, you will still hear it; but in the room itself is dead silence. It is essential that a student should grasp the fact that this is no paradox, but a sober truth. Blowing wind down a length of gas-pipe produces no sound : the air flows through undisturbed and comes out the other end. But blowing down an organ-pipe or penny whistle is a different matter; they have been specially constructed so that the air is agitated—*i.e.* is made to vibrate. That is all that has happened, and *sound* does not occur until those vibrations reach an apparatus—the ear of a living thing—created to turn vibrations into sound. A live wire is charged with electricity, and if you touch it you receive a shock; but there is no shock in the wire, only that which will produce a shock if contact be made with something capable of experiencing it. Similarly, a piano is an instrument for producing vibrations which can be transformed into sound if they happen to come into contact with a receiving-apparatus.

## ABOUT VIBRATIONS.

*Musical sounds and noise.* The word " periodic " has acquired an untrue meaning in ordinary conversation. If a man says he goes to concerts periodically we gather that it is, with him, rather a haphazard matter. But in science the word invariably means that the intervals between occurrences are mathematically exact. The seconds in a minute are " periodic." And the first scientific fact about vibrations which is of real importance is this : when a body vibrates periodically the result, whether pleasant or unpleasant, is always a sound of fixed pitch. Unperiodic vibrations, however pleasant the result may be, never give a sound of which you can say " that is C sharp, or B flat." Some definite basis had to be found on which we could discriminate between " musical sounds " and " noises," and this matter of periodicity is universally accepted as the test. Some may think it unfortunate that the ugliest note you can sing through your nose is to be called a musical sound, while the rustling of trees or the ripple of the brook are branded as noises; but as a mere matter of nomenclature a musical sound is agreed to be a sound of definite pitch resulting from periodic vibrations, and a noise to be any sound to which no pitch can be accredited.

## THE THREE CHARACTERISTICS OF A MUSICAL SOUND.

Every musical sound has three, and only three, characteristics. That is to say, if a man can define a sound beyond doubt in regard to these three aspects you will be able to reconstruct in your mind the sound existing in his. These three characteristics are Pitch, Intensity (*i.e.* loudness), and Quality (or timbre). Given that a sound is middle C, that it is exactly as loud as the note I sing to you, and that its timbre is that of a clarinet, then there is nothing more to be said.

It is, however, to be noted that such a description is not quite so easy to make with precision as may at first sight appear, since pertinent questions may be asked on each aspect. (1) Is middle C the same all over the world? (2) Is there any standard of loudness to which one can refer? One girl may be prettier than another; the sky may be bluer to-day than it was yesterday; but we cannot say exactly *how* pretty a girl is nor *how* blue the sky. Is not intensity a characteristic outside measurement? (3) Is the timbre of all clarinets the same on the same note?

Such questions as these will now be discussed in turn.

## PITCH.

### Variations of Pitch.

The first interesting thing about notes of definite pitch lies in the discovery that the "lowness" and "highness" of sounds depends solely on rapidity of vibration. The quicker the vibration-rate, the higher the resultant note.

There are various ways, when a body is vibrating, of changing its speed. Should you wish to make a stretched string vibrate more quickly you can tighten it (as in "tuning" a violin) or shorten it (as on a violin you use the fingers of the left hand); and with a pipe, the shorter the pipe the higher the note, because the small pipe produces more rapid vibrations. And scientists soon discovered that there was a definite arithmetical relationship between vibration-numbers and pitch. If you get a vibrating body suddenly to vibrate twice as rapidly the sound will immediately jump up an octave. Further, if you put your finger down exactly half-way up a violin string, or if you make an organ pipe exactly half as long, you will double the number of vibrations in each case, and get a sound an octave higher.

### Velocity.

Velocity is the name given to the rate at which vibrations travel through a medium, from the origin to the ear of the hearer. If you see the flash of a gun in the distance you will hear the report of it later; and the distance divided by the time gives the velocity of sound. This is generally estimated at 1,100 feet per second in air, which proves to be approximately a mile in five seconds. More accurately the velocity is 1,090 feet per second when the temperature is at freezing point, with an increase of 1 foot per second for each degree that the temperature rises. Loud and soft sounds travel at the same speed.

It is a curious fact that air, although to human beings it is the medium through which vibrations normally reach us, is not actually a very good medium—at all events for speed. For in water the velocity of sound is 5,000 feet per second, in wood from 10,000 to 15,000 (according to the kind of wood chosen), and in iron and steel 16,000.

### Limits of Audibility.

If we experiment with an instrument which will produce as many or as few vibrations as we want—the Galton whistle is one specially constructed for such a purpose—we discover the curious fact that there are limits in pitch, both high and low, to the sounds we can hear. There is a slight variation between different people, but generally speaking silence suddenly occurs if the instrument vibrates below 20 per second, or above 38,000. Further, although we can hear *sound* between 20 and 38,000, we can only distinguish pitch between about 30 and 4,000. Most people will easily convince themselves that if a very few semitones were added to the piano, at either end, it would be impossible to distinguish between them.

The student should be familiar with two ordinary methods of measuring the vibration-numbers (or frequencies) of notes. The *Siren* is a disc with equidistant holes in it, near the rim, and it is made to revolve by machinery. A stream of air, blown through a blow-pipe at a point which the holes will pass when the wheel is rotating, will force a little puff through each hole in turn. As the number of holes is known, and the number of revolutions of the disc can be accurately controlled by electrical machinery, the Siren can be used experimentally with confidence.

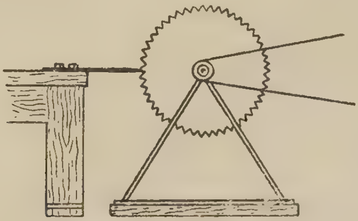


FIG. 1.

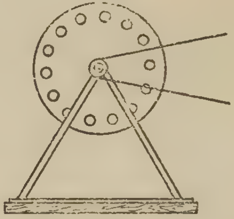


FIG. 2.

The second method is *Savart's wheel*, or ratchet-wheel. It is similar to the Siren, but instead of being pierced with holes the disc has teeth on its rim, like a circular saw. A thin strip of elastic metal is placed just in contact with the rim, so that each tooth depresses it, while its elasticity enables it to spring back on to the next tooth. This vibration of the strip of metal can be made to produce a note of any pitch desired.

### Absolute Pitch.

When we say in conversation that anyone possesses Absolute Pitch, we mean that on hearing a sound they can give it its name, saying "that is F sharp," and so on. But few of us stop to think that no one could do this if it had not previously been settled by anybody what note F sharp is to be.

From fairly early times attempts have been made to settle what is to be the exact vibration-number of C, and the result has never been satisfactory to everybody. The scientists, for the sake of mathematical simplicity, have always wanted to begin by an imaginary note C of 1 vibration per second. The octave to this would have a frequency of 2, the second octave 4 (*i.e.* $2^2$), the third octave 8 or $2^3$: it being easy to see that the seventh octave is $2^7$ and so on. This is called *Philosophic Pitch*, and under it treble C (3rd space in the treble clef) would be $2^9$ or 512 vibrations per second. French pitch or *Diapason Normal* was settled nearly a century ago at 517. English pitch, known as the *New Philharmonic*, was agreed upon in 1896 as 522, and the old confusion caused by having three English pitches (Concert, Covent Garden, and Crystal Palace) was cleared away. None of these three old pitches is in existence now, though in remote country districts people still sometimes speak of "Concert-pitch."

### The Six Ways of Producing Vibrations.

In almost every branch of life the difference in the knowledge of methods between the present day and the early stages of fairly primitive life is so great that volumes could be written on it. Yet it was discovered by human beings in an almost rudimentary state that there are six main methods of producing vibrations, and at the present moment there is still no feasible and practical seventh method to be added. The six are :—(1) column of air, (2) stretched strings, (3) reeds, (4) membranes acted on by air, (5) membranes acted on by solids, (6) solids acted on by solids.

(1) *By means of columns of air.* That is to say, by enclosing a column of air in some sort of pipe, and agitating it into a state of vibration. The fundamental principle is that of the penny whistle :—

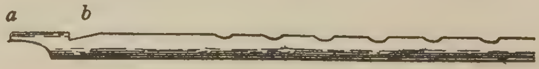


FIG. 3.

The air is blown in at *a*. At *b* there is a slight depression. If there were not the air would flow directly through the tube and there would be no sound at all. But this depression divides the air into two, with a kind of splash; and the miniature explosion causes the column of air in the tube to vibrate. The rate at which it vibrates (*i.e.*, the pitch of the resultant note) depends on the length of the pipe, which is settled by the fingers covering the holes. An organ flue-pipe is just a penny whistle on a large scale, but used to produce only a single note.

(2) *Stretched strings*. Strings may be excited into vibration in three ways: by bowing (violin), by striking (piano), or by plucking (guitar). As soon as a string vibrates it behaves like a skipping-rope, being fixed at both ends. Each particle of the string is describing a circle at right angles to the long loop made by the string as a whole, therefore the vibrations are called "transverse." This process is easy to understand if you imagine a skipping-rope with a ribbon tied on it; you can stand in front and see the oval-shape formed by the rope, and you can see that the ribbon is describing a circle at right angles to it. The vibrations of air are, in distinction to this, called "longitudinal," because if I sing a note and you hear it, then the air between us has oscillated concertina-wise along the path the vibrations have traversed.

The pitch of the note produced by a string depends on four considerations: (1) the length of the string, (2) its tension, (3) its diameter (*i.e.*, its thickness), (4) its density. The formulæ which embody the exact differences caused by variation in any of these four respects can be found in any elementary work on acoustics; but it has already been pointed out, in regard to (1), that halving the length produces a note an octave higher, doubling it a note an octave lower.

FIG. 4.

(3) *Reeds*. If we take a thin strip of elastic material (*i.e.*, material which, when disturbed from its position of rest, tries to spring back and regain that position) and fasten it down at one end we have the reed in embryo. A thin strip of steel held at one end by a vice will serve as an example. Move the free end an inch away and let go, and you will find the strip will vibrate until ultimately it regains its original position of rest. A tuning-fork is an example of two reeds on one stem.

The vibrations of a reed are, in themselves, so feeble that little or no sound is heard unless the ear is very close to the origin: methods of amplifying them will be referred to later under Resonance. But two classifications deserve notice.

(*a*) You can have *free* reeds or *beating* reeds. Since reeds are normally acted on by air it is usual to construct them with an air-passage underneath them: the little strip of metal in a mouth-organ being an example. An oblong passage, through which the air is forced, is made in a block of wood (see figure), and the strip of metal, longer than the passage, is screwed down at one end, so as to cover the hole. When the air comes up the reed is forced upwards, and its elasticity compels it to spring back. If it is too large to pass through the aperture it is a *beating* reed; but if it is narrow enough and short enough to pass through the opening, then it is a *free* reed.

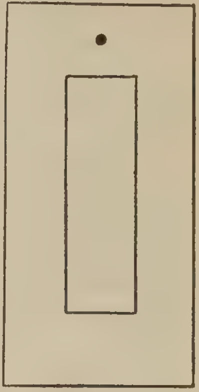


FIG. 5.

(*b*) You can have *single* or *double* reeds. An example of the single reed is found in the clarinet, where the reed is fixed down over the opening into the instrument, and the player forces air between the two. The oboe and bassoon furnish examples of the double reed, the mouthpiece of each being formed by two reeds bound tightly together. The schoolboy who discovers that he can create a disturbance by holding two pages of a book tightly together and blowing between them has discovered the principle of the double reed.

(4) *Elastic membranes acted on by air.* This apparently recondite method can be best illustrated by the example of the human voice. In the windpipe is an apparatus called the Larynx, and the general reader will grasp its workings if he imagines it as a very small bottomless jam-pot with a covering to it—not of paper, but of an elastic membranous substance. Across this covering a knife has cut a slit which forms a diameter.

When we loosen this covering the air from the lungs can pass noiselessly through the slit; but if we tighten the membranes (called the Vocal Cords) the air has to be forced through the opening, the cords vibrate, and the result is the human voice.

(5) *Elastic membranes acted on by solids.* Nothing need be said concerning this method beyond pointing to the drum as its outstanding example. The note produced by a drum depends on the tension of the membranous covering.

(6) *Elastic solids acted on by solids.* Gongs and bells are types of this method, which is brought into musical use by such instruments as the Glockenspiel and Celeste.

## INTENSITY.

The word intensity is merely the scientific term for loudness. Scientists found themselves obliged, if they were to have any "standards of reference" in regard to intensity (so that, for instance, the words "twice as loud" should have a definite meaning), to find some system of measurement in regard to the intensity of a sound. Their investigations resulted in the establishment of two Laws of Intensity. The first law, that "Intensity varies directly as the square of the amplitude of Vibration" will only be stated at this point. In order to understand its meaning the reader must wait until, later on, the "associated wave" is explained. The second law, that "Intensity varies inversely as the square of the distance from the vibrating body," is one of those scientific statements which are apt to frighten the lay mind. But it can be understood by a child.

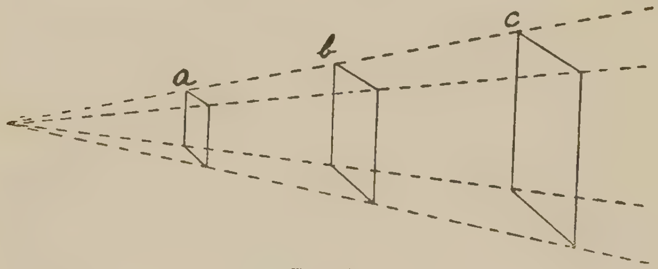


Fig. 6.

Imagine a magic-lantern throwing a square of light on to a sheet. If the square at *a* has a side of 1 yard, then there is 1 square yard of light. If the sheet is placed exactly twice as far away from the lantern—at *b*—then the square has a side of 2 yards, and there are 4 square yards of light. At *c*—three times as far off—there are 9 square yards. This fact is expressed mathematically by saying that the area of light varies directly as the square of the distance: double the distance and you get four times the area: treble the distance and you have nine times the area.

A moment's thought will convince a non-scientist that since the same *amount* of light which spread itself over one square yard at *a* has to spread over four times the area at *b*, and nine times at *c*, its intensity at *b* will be one-quarter of that at *a*, and its intensity at *c* one-ninth.

This is expressed mathematically by saying that the intensity of light varies inversely as the square of the distance: double the distance and the intensity is one-quarter what it was, treble the distance and it is one-ninth.

Exactly the same is true of sound. If your seat is 10 feet from the loud-speaker and you move to a seat 20 feet away, the sounds you hear will be one-quarter as loud.

The above two laws, though scientifically true when conditions are ideal, are seriously interfered with in ordinary life by the fact of Resonance, which will now be considered.

## Resonance.

When vibrations meet an obstacle one of three things may happen to them. They may be destroyed, or reflected, or refracted.

They will be destroyed if they come into contact with anything soft, much as the career of a tennis-ball is ended by contact with a net.

They will be reflected on meeting a hard obstacle, much as a ball hit against a wall.

Refraction, or " bending " of the direction of vibrations due to conditions in the air, need not be discussed here, as it is one of the problems of transmission.

The important practical aspect of Reflection is this. You are seated in a concert hall and a soloist is singing. Vibrations from the singer's mouth travel in a straight line to your ear. But they are travelling also in an infinite number of straight lines in every other direction, and those that hit the ceiling, the side walls, an empty chair or anything whatever that is hard, will " bounce "; and consequently the original vibration which came to your ear in a straight line are reinforced by a large number that have travelled over an angular course. This is why the " resonance," or reverberation-factor, of a room is lessened by the presence of carpets, tapestries and curtains, or clothes.

The above explains Resonance in its ordinary conversational sense. In its strictly scientific meaning the word implies the sympathetic vibration of another body which adds its own vibrations to those originally created.

This is of three kinds, according to whether the original vibrations are increased:

(1) By a second body in contact with the first: an example being a tuning-fork which, though inaudible by itself, produces a loud sound when the end is placed on a piece of wood.

(2) By a column of air: as in the case of a clarinet or oboe where the air enclosed by the wooden part of the instrument reinforces the vibrations of the reed.

(3) By a distant body: as when, by depressing the right-foot pedal of a piano and striking one note, a number of untouched strings will immediately begin to vibrate and enrich the tone of the one string struck.

## QUALITY.

Of all the colours that an eye sees in a day only a minute fraction are " primary." The others are all mixtures, and the untrained eye is unable to tell what the component parts of such mixtures may be. And with sounds the same thing is true. It is always a matter of incredible surprise to learn that, even in listening to a note of definite pitch, we are almost invariably listening to a whole series of other notes at the same time. A very little patience with one's ear will, however, convince anyone that what seems to be a single clear note struck on the piano really does contain many other sounds; and by means of instruments constructed for the purpose (such as resonators) scientists have determined for us exactly what those other sounds are.

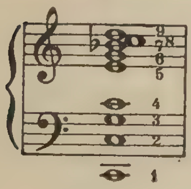


Fig. 7.

If we strike the low bass C—the bottom note of the accompanying example (Fig. 7)—we think we are listening to a single note; but in reality there is a whole series of " overtones " sounding, of which the first eight (making nine notes with the " prime tone ") are given.

Scientists, instead of speaking of this illustration as a prime tone with eight overtones, say that it gives us the first nine " partial tones " of the low C. The whole series of partial tones is called the " harmonic chord "; so that we have here a specimen of the harmonic chord as far as the 9th partial.

From this chord many things come to light. For instance:

(*a*) 1, 2, 4, 8 are all C; and were the series continued it would be found that 16, 32, etc., are also C.

(*b*) 3, 6 are both G; and 12 and 24 are also G.

(*c*) The vibration-numbers of the notes correspond to their number in the series. If the frequency of low C were 60, then the frequency of the 7th partial is 60 × 7.

(*d*) The pipe-length required for any of the notes bears the same relationship inversed. If the low C requires a pipe of 8 feet, then treble C (the 8th partial) will require a pipe of 8 feet ÷ 8; *i.e.*, 1 foot.

(*e*) A little elementary arithmetic will show that if the frequency of the 5th partial is 100 × 5, and that of the 4th partial 100 × 4, then the ratio between the upper and lower notes of a major third is $\frac{5}{4}$; and all the ratios (or vibration-fractions) of the scale-intervals can be found:—

| | |
|---|---|
| 8ve | $\frac{2}{1}$ |
| ma. 6 | $\frac{5}{3}$ |
| mi. 6 | $\frac{8}{5}$ |
| 5th | $\frac{3}{2}$ |
| 4th | $\frac{4}{3}$ |
| ma. 3 | $\frac{5}{4}$ |
| mi. 3 | $\frac{6}{5}$ |
| ma. 2 | $\frac{9}{8}$ |

It is not necessary in any sound that *all* of the possible partial tones should be present, nor that those which are present should all be sounding with equal intensity; and this fact will prepare the reader for the one outstanding fact about the Quality, or timbre, of a sound. It is due to one thing only—the number and intensity of the upper partials present. If you were, with the utmost care, to construct an instrument which gave about 30 partials, each of them a simple pure sound (*i.e.*, a sound which itself possessed no partials) it would be easy by mixing certain of these 32 notes to produce the quality of a clarinet, by mixing others to produce the trumpet or flute quality. Indeed, in many modern Cinema organs the stops of varying instrumental tone often produce their different qualities from the same set of pipes, in this synthetic way.

## TEMPERAMENT.

Many musicians are afraid that their mathematical skill is not great enough for the understanding of the question of Temperament. But a minimum of arithmetic will enable them to see what the problem is.

Suppose middle C was produced by 1 vibration per second, then treble C, the octave higher would have a frequency of 2.

Again, if middle C is 1, then E (the major 3rd above it) is $1 \times \frac{5}{4} = \frac{5}{4}$. Similarly, G sharp (the major 3rd above E) is $\frac{5}{4} \times \frac{5}{4} = \frac{25}{16}$. Similarly, B♯ (the major 3rd above G♯) will be $\frac{25}{16} \times \frac{5}{4} = \frac{125}{64}$. It is obvious, therefore, that something has to be "wangled," since on the piano B sharp and C *must* be the same note, and treble C is 2 (*i.e.* $\frac{128}{64}$).

Again, your piano probably has 7 octaves, from A to A. If the frequency of the lowest note were 1, the 8 A's would have the following vibration numbers: 1, 2, 4, 8, 16, 32, 64, 128. Now if you went up your piano in perfect 5ths—A, E, B, F♯, etc., you would find the twelfth 5th landed you on the top A. Their vibration numbers, however, would be: 1, $\frac{3}{2}$, $\frac{9}{4}$, $\frac{27}{8}$, etc., etc. . . . and it is clear that the numerator is always going to be an odd number, the denominator an even one; so that the last note anyhow cannot be 128.

This discrepancy of 3rds and 5ths made it essential, in a keyed instrument, to tamper with the intervals, since it was obviously impossible to tamper with the octave. Many methods of adjustment have been tried through the ages, and it was the authority of J. S. Bach which finally gave the victory to "equal temperament," where every semitone is made exactly a twelfth of an octave by putting all of them a very little out of tune.

The factor of the Harmonic Chord enabled scientists to discover many other things about sound which are too complicated to be treated in an elementary article such as this. Any student who is sufficiently interested will find it worth while to make himself acquainted with the meaning of such things as Combination and Differential Tones, Phase and Interference, Beats, and Consonance and Dissonance; and any elementary work on Acoustics will introduce him to their mysteries.

## TRANSMISSION.

The question of transmission of sound—that is, of what happens in the air between the origin and the listening ear—is clearly a physical and not a musical inquiry. But it is proper to outline the scientific approach to this question, since all of us speak of "sound-waves," and unless the meaning of the word "wave" in this connection is rightly understood the whole of one's acoustical knowledge may be based on a misconception.

*The law of pendulum-motion.* A pendulum consists of a length of material fixed at one end, with a weight (called the "bob") attached to the other. If you sit in a garden swing you have constructed a pendulum of which you yourself form the bob.

Certain facts about a pendulum in action are at once obvious: for instance, (1) the bob travels on the circumference of a circle, (2) the speed increases rapidly as the bob falls downhill, and decreases as it travels uphill, and (3) the extent of each swing (*i.e.*, the length of the arc of the circle which the bob traverses) diminishes every time, and ultimately, if no further force is applied, the bob will attain a state of rest. The *Law of Pendulum Motion* is that, for all practical purposes, each swing takes the same time in which to complete itself. A musician may construct a metronome by merely tying a weight to a piece of string and hanging it on a nail. Whether covering its full range of nearly a semicircle, or (as it "tires") swinging merely half-an-inch, it is beating correct time for his performance if the original time (which can be secured by adjusting the length of the string) was correct.

Without here going into the scientific reasons for the facts, students should know that it was discovered that the "graph" of the motion of a pendulum—*i.e.* the curve showing the rate of increase and decrease in the speed of the bob—was also the graph which represented the alternate condensation and rarefaction caused in the air when in a state of vibration. This curve, known to mathematicians as the "sine-curve" (see figure), is called the "associated wave," and it has three characteristics: (1) length (AF), (2) amplitude (*i.e.*, height of the crest *plus* depth of the trough: BD + CE), (3) shape.

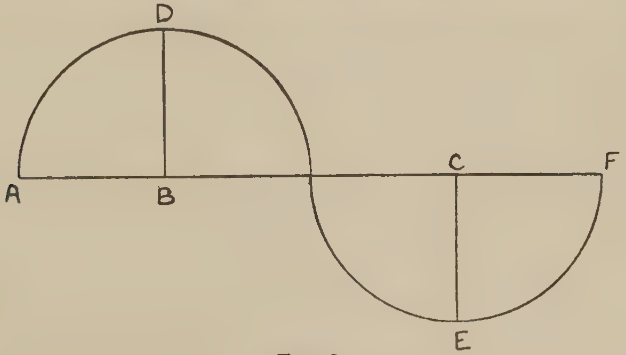


FIG. 8.

Readers will remember that a sound has three characteristics, Pitch, Intensity, and Quality. And it is a scientific fact that each of these corresponds to one of the three characteristics of the graph.

The *Pitch* of the sound and the *Length* of the associated wave correspond. The curve of the wave does not picture anything which is actually happening in the air: it is the graph which indicates the alternate condensation and rarefaction of the air (in a straight line). If I sing a note at a pitch which causes 100 vibrations per second, then in one second those 100 vibrations are spread over 1,100 feet: consequently each vibration is 11 feet long. If I suddenly sing the note an octave higher, then 200 vibrations fill 1,100 feet and the length of each is 5½ feet. Hence the length of the graph of the vibrations is halved when the pitch is raised an octave.

The *Intensity* of a sound corresponds with the Amplitude of the sound-wave. It might strain the patience of the reader to explain the methods by which scientists established this fact; but the truth of the following statement—which is the first Law of Intensity—may be universally accepted: The Intensity of Sound varies directly as the square of the amplitude of vibration. If the amplitude of the associated wave (the height of the crest *plus* the depth of the trough) is doubled, then the sound of which it is a graph will have been four times as loud.

The *Quality* of a sound corresponds with the shape of the associated wave. It will be enough on this point to say that each partial tone in a sound has its corresponding graph, and that the final associated wave is the combination of those of all the partials present. And since variation in quality means only variation, in strength or number, of partials, it is clear that any change in the quality of a sound must alter the outline of the resultant curve.

## THE HUMAN EAR.

Any discussion of the receiving-apparatus would be more in place in a medical text-book, and the knowledge of it, which at best can be only superficial and may well be also misunderstood, is of no importance whatever to a musician.

## CHAPTER VII

# THE MUSICAL TRAINING OF THE YOUNG

This chapter will naturally be read in the light of the work as a whole. I have in mind several different types of reader, and each, I am sure, will bear with me while I am addressing others—parents, young teachers of music, elementary school teachers, amateur music-makers: all who have their cheerful part to play in making the nation musical.

But can you "make" anyone musical? Strictly, no, any more than you can make him mathematical; but every normal child responds to music, and there is no more reason why he should not be grounded in it, and made capable of profiting, later on, by more specialised training, if he shows the right aptitude, than there is for withholding lessons in mathematics or history, on the supposition that he will not become a professor of either. Indeed, there is every reason why he should be so grounded, for the first thing to realise is that music is a "humanity," a civilising, internationalising influence. Without trying to exalt it over other subjects, I claim that it is quite as worthy to rank with the humanities as a language is. But it is not yet everywhere taught upon that assumption. It is not so regarded in the schools which train the minds of over ninety per cent. of our children. They have their woodcraft or chemistry masters: why is there not a music master in every elementary school?

There is no need to insist on the pleasurableness of music. That essential nature, whilst furnishing an argument for the wide dispensing of the means of musical self-development, is apt to obscure one aspect of it that musicians wish to urge—its value as mind training. That was perhaps not so obvious in former days, which took less account of "methods" and plans and apparatus, clubs and guilds, than we do to-day. But those who have had even a rough bringing-up in music know that by it the mind can be extended and exercised just as thoroughly as through mathematics or any other study; and there are always the extra dividends of its social service and personal pleasure.

One of its greatest values lies in the development of individuality, which mass education tends to stifle—particularly in boarding schools. With that goes discipline, for the musician quickly finds out that mere eccentricity or wilful "difference" is unprofitable. Individuality in music flourishes from out the discipline of training, and thus two qualities that are most valuable in other affairs of life develop together.

The mention of methods, clubs and the like brings up the point that modern teachers think of music, on its teachable side (for, when all is said and done, there are some elements in it—and those the deepest—that are scarcely communicable), just as they think of any other subject, *i.e.*, in the light of all the knowledge we have of the child's mind. *Mutatis mutandis*, music has its equivalents of the Dalton Plan, of group work, and the personal investigation and self-activity that distinguish modern study in all branches of education. The first thing that the musician earnestly asks the layman to do is to think of music as a subject, like all the others in a liberal education (of which it is a valuable constituent), to be taught by properly skilled persons, on enlightened lines: needing proper time and appropriate (if little) apparatus—fit instruments, for instance. There is obviously on more reason for imagining that a poor piano "will do" for the beginner than there is for giving him and his teacher blunt chisels and crooked saws with which to begin woodwork, or inferior chemicals, that won't bring off the experiments, for his early demonstrations in the laboratory. Nor, to carry the argument a step further, is there any justification for providing him with an inefficient teacher, or pretending that an untrained one can carry him further than the teacher's own knowledge goes.

The child begins to learn the moment he hears a sound, from his cradle. Sound is the first thing that attracts him, and the world of music exists for his constant pleasure and mental development through life. Upon many factors—notably his natural aptitude and zeal, and the time he can give to it—depend the length and depth of his pursuit of music; but he has a simple right to be brought into the friendliest relations with it from the beginning; and music, in its turn, claims the right to be respected, and to be properly taught by persons of proved skill.

## A CHAPTER FOR AVERAGE PARENTS.

The musician's best friend should be the parent or guardian, under whose guidance the child spends the vitally important first years. Unless he prepares the little one's mind for music, how shall a teacher, taking over at, say, six, find receptive ground for his specialised ministrations? Now, the majority of parents will probably say, " But I'm not a music-teacher: *I* wasn't taught music—or not for long. I've forgotten most of it, anyway. What am I to do? " The time may come when parents will almost universally be able to read and perform music for their own pleasure, and, through wider contact with musicians, have a clear understanding of the fundamentals of teaching music. If we teach the children properly to-day, that generation is assured. But most of us can claim little or no practical knowledge of it. What can we do? Two invaluable things: one, surround the child with good music from his first moments of life; and two (the other side of the shield), keep poor music away from him. The first is far easier than the second, on which, though it is extremely important, I can spend but a few lines. We agree that in all the education of life first impressions are the strongest. Now, there is far more poor music in the world than good; and the root anxiety about this is that whilst in other subjects there are in daily experience quick correctives for error, in music there is none. If inaccurate figure-tables were taught at school, or if a teacher declared that Broadstairs lies among inland mountains, and Birmingham is lapped by the Atlantic waves, how quickly would experience—our own or someone else's—correct the folly! Yet greater follies may be—are—taught in and about music, and downright rubbish is daily poured forth to millions by radio and gramophone. If the literature placed before children, at school and in the home, were on the level of a great deal of the music that it is almost impossible to prevent their hearing, would not every intelligent person protest? That is the supreme handicap of music and the musician, this deluge of—I will not say " bad," because that so often connotes moral damage—but poor, anæmic, unnourishing music. I will not, in this connection, dwell on the Jekyll-and-Hyde nature of broadcasting, and of the baser commercial side of music as a business. I take it that the readers of this book include none of those who say, " What does it matter if the child does hear poor music? " A great part of many teachers' time is taken up with counteracting the debilitating effects of that. And we, as parents, can do our part. We might even begin by examining the music on the piano-top. . . . There are hymn-books, too, that contain music as poor as that of any " crooner."

In the beginning, then, unostentatiously surround the child with good music. Active teaching need be but slight. And from his earliest days he may well become accustomed to hearing, now and then (even if he does not always for long, or consciously, listen to), fine music of some elaboration. Naturally, one does not attempt to teach him anything about this. It is merely the beginning of a habit of living amongst and being friendly with all sizes of good music. If that habit had been established, and the other youthful activities of which I shall speak had been encouraged, should we have the miserable letters in the papers, from " Hater of Chamber Music " and " Anti-Bach "? These sometimes depress musicians, but they have the consolation of feeling how excellently Tapleyan is their optimism (whatever be its measure) about the musicality of the masses. Whether or not they be particularly cheerful about this (and it is difficult to find the foundations for the belief that by swamping people with music you can wholesalely make them musical—any more than all the cultural facilities of the past half-century have made everybody cultured), musicians agree that every child should have the opportunity of coming into free, natural, constant contact with good music, whilst he is protected from the pernicious influence of that witless amusement-in-sound that is obviously just a wasteful, intellectually and spiritually harmful industry, having next to nothing to do with music. When he grows up, he can choose for himself; and then the less coddling, the better; but children need protecting from æsthetic as well as from social and economic evils.

One good thing every parent can do: teach the child to respect music and musicians. One so taught (in the only lasting way—by example) will not turn on the radio and talk or eat through it, will not come late to concerts, or think of musicians as ridiculous and slightly inhuman.

Radio, the gramophone, the pianola, musical boxes (these last with their often happy old associations of our childhood: do many of them remain unbroken to-day?)—all these offer ready means of surrounding the child with good music; but the personal factor should enter from the start. There are few parents unable to sing, hum, or play tunes for the child to hear and copy. He is thus brought straightway into the right mental relation with music—as something for us to *do ourselves*; and in that active relation will lie much of his future pleasure. Self-activity is the child's first need. He wants to *do*; and he learns to do both by initiating and imitating. So let him march, dance and imitate our songs or simple piano tunes. Very soon the tiniest lessons in style can be usefully given, by letting him hear good models: sooner (if deftly done) than many imagine. The great thing is to get it into the child's mind that one of the most natural things in the world is to make music: he will soon make up tunes for himself.

A little dulcimer or pipe is a good first instrument. Organised pipe-making and playing is a comparatively new idea. There are several books about it—one by Carol Bottle, and another by Halliday (" Making Musical Pipes ": Dryad Handicrafts, St. Nicholas Street, Leicester, 1*s*.).

I went to a big store to buy a dulcimer for a little boy one Christmas. The reply of the assistant, when I said, " But all these are badly out of tune," was a commentary on musical education. " Oh," she said cheerfully, " they are only toys: people don't mind; and besides, these are cheap ones." The assumption that a cheap instrument (and these were not actually very cheap) need not be in tune—with all the probability it carries, of vitiating the child's ear for pitch; that is one of the things that is apt to depress the musician.

Naturally, I have not presumed, in writing this article, that parents have any specialised musical knowledge. If they have it, they will probably not need advice. Those who have none may like to read a little about the principles of teaching music to young children. I take it that many will have gone further back, and read some of the books about modern education in general. There are so many of these, and the means of getting information, through libraries and such useful bodies as the Parents' Association (56, Manchester Street, W.1) and the Child Study Society (90, Buckingham Palace Road, S.W.) are so readily to hand that I need not do more than mention a few books which I have read with profit: Susan Isaacs' " The Nursery Years " (one of Routledge's " Introductions to Modern Knowledge," 6*d*.); Sir John Adams' " Educational Theories " (Benn's Sixpenny Library); Piaget, " The Language and Thought of the Child " (Kegan Paul); T. P. Nunn, " Education: its Data and First Principles " (Arnold); Blatz and Bott, " Parents and the Pre-School Child "; N. Catty, " The Child at Home, his Occupations and First Lessons "; Crichton Miller, " The New Psychology and the Teacher " (Jarrold); Margaret Drummond, " Five Years Old or Thereabouts " (Arnold).

The most compact and cheapest guide to " What to Read on Education " is published by the

Leeds Public Libraries at 3*d*. It is written by Sir John Adams. Most public libraries contain this booklet. (There is, by the way, another in the same series, by Ernest Newman—" What to Read on the Evolution of Music.")

The musical training of the child, then, is obviously one side of training him for a complete, all-round life—" the good life," as it is often called. Whatever specialisation may come later, the earliest experiences in music are as valuable as those in any other sphere, for the development of the imagination and the spirit; and especially when the child takes part with others in music-making, for the formation of character—for real training in music is a training in *work*. That is a thing to keep always steadily in view.

Schematic outlines abound : some are drawn up by musicians who are also psychologists and, as we say, " born teachers " (though one has to learn teaching like any other business : only some are more powerfully charged with the ability to learn and teach, with sympathy and intuition, than others). Some " systems " are less firmly founded. In music, the well-meaning sentimentalist and crank is not unknown. Parents who, having studied the child in general, wish to apply their knowledge to the special problems of musical education, will find a useful short discussion of principles (concerning not only young children, but all of school age) in Stewart Macpherson's " The Musical Education of the Child " (Williams, 3*s*. 6*d*.). It has a section about the music teacher's work, from which laymen may gather the modern view of what is to be expected from such practitioners. Another good general article is that by Marie Salt, which forms the Appendix to Part I of Macpherson and Read's " Aural Culture based on Musical Appreciation " (Williams, 5*s*.). This title is the clue to the musicianly outlook on all training of the faculties used in attending to music. The word " appreciation " is here used chiefly in its simpler meaning of " liking and taking in." Unless musical training is so based, much of it is wasted. " Learning " music mainly from books, without doing and expressing, is not really learning at all, to the child. He must be stirring, inquiring, making things, unselfconsciously reacting to the stimulus of sounds.

There is ample store of cheap books of good tunes to sing and dance to. For sixpence or a shilling any of the best-known publishers can supply one. Many of the tunes will be folk-airs. Nursery rhymes, of course, will come very early, and simple action songs, such as the six in " Dickory's Horse," by Anne Thompson (Novello, 1*s*.), can quite well be introduced by parents as part of the normal repertory of play. It is in this way—by making music an integral part of the child's interests, first building it up through play, as he builds up so much of his experience and imaginative life—that we shall bring up a generation to whom music is as natural and necessary as food for the body. How else, indeed, can we do that? Sir Henry Hadow's brochure, " The Needs of Popular Musical Education " (Oxford Press, 1*s*.) has thoughts worth our studying.

The limits of the parent's powers will be obvious to him; but my experience is that more parents, by taking a little thought and preparation, could start their children aright, musically. We know how much stronger is the impression on the child's imitative mind when daddy or mummy shows the way, and joins in his play. All this early work needs the fresh air of freedom. It can be quite definite, valuable work, and the child, in this as in any other subject, can readily be got to make efforts, to correct and perfect them. The chief thing is to respect the child, to remember that his mental processes and results are not to be measured by our maturer ones, and to attempt nothing beyond the scope of his interests and natural activities. One has, for instance, occasionally found that children have been taught a poor, sentimental love ballad. I have even heard such a thing made the basis of an action-song. This is to dishonour the child's mind. It follows, from our understanding of the processes of pleasurable and sure learning, that we shall not attempt to teach " theory " or scales from books, or from recollections of our own early lessons, unless these happen to have been exceptionally good, and to have been well remembered in detail.

The average layman, of whom I am thinking, after bringing up his child, as a baby, in constant friendly association with sweet sounds, in nursery rhymes and folk songs, with and without simple actions and " dressing up," will wish to ensure that kindergarten-school work in music is as well founded. This brings in the many (sometimes almost bewilderingly numerous) methods of teaching through self-activity, in the years during which the child develops the capacity for team-work. These methods are now so well employed in good kindergartens that, if the parent first takes sufficient care to inquire into what is done in music at different schools, he should have no difficulty, in most parts of the country, in finding enthusiastic teachers to carry on the good work he has begun.

There will be both freedom and discipline in such a school, and both individual and co-operative doings. The Percussion Band is one of the modern means of bringing out the latter quality. Drums, triangles, cymbals and other little instruments are played, to the filling-up of the piano, and the conducting of one of the band. This important post should, ideally, be taken by each in turn. The attention being concentrated upon rhythmic activity alone, the smallest mind can engage in this pursuit and get musical benefit, if there is a wise guide, insisting on the finest finish it is possible to get, in every action. The obvious danger is that of making a mere noisy game of it. Properly managed, such a band is an attractive entrance-gate for the smallest children. It should not be allowed to take up too much time, however, or be made too much of an end in itself. The success of the affair will depend on how well the balance is held between musicianly, responsible seriousness, the recreative element, and the idea that the band is a stepping-stone to other, more advanced stages of music-making. Some books on the percussion band are Rusette's " The Children's Band " (*2s. 6d.*) and " Children's Percussion Bands " (*3s. 6d.*: both Curwen); the same author's " Children's Percussion Bands " (Kegan Paul); Yvonne Adair's " The Percussion Band " (Novello, *1s.*); and the instruments, with music for them, can be supplied by Williams, Curwen, Novello and other large music publishing houses.

An excellent survey, whose scope is indicated by its title, is Lilian Bucke's " Music in the Kindergarten and Lower Forms " (Williams, *5s.*).

A scheme of kindergarten work, well illustrated, which anyone can understand, is described in Mrs. Murray Macbain's " Play-Ways in Musical Training " (Evans Bros., *3s. 6d.*). This is the sort of outline that makes us all wish we had been brought up to music in those ways ! A book from which alert parents can get happy hints to put into practice is Walter's " Old English Singing Games " (Black, *3s. 6d.*). Rhythmic self-expression in infants' schools and kindergartens has been the subject of much study. Three books by Mortimer and Davies—" Characteristic Games and Dances " (*3s. 6d.*), " Dramatic Games and Dances " (*3s. 6d.*), and " Rhythmic Work " (*6s.*)—all published by Curwen, give a good idea of aims and values. The whole subject of Eurhythmics, associated with the name of M. Jaques-Dalcroze, has been placed upon a broad foundation, and good teachers of this bodily-mental, spirit-freeing musical " gymnastic " (using the word in its wider, original Greek meaning) are now to be found in many centres. If a local one is not known, the central office, London School of Dalcroze Eurhythmics, 23, Store Street, W.C.1, will make a recommendation. Two books by M. Dalcroze will be found stimulating, even fascinating: " Rhythm, Music and Education," and " Eurhythmics, Art and Education " (both Chatto).

## ON CHOOSING A MUSIC-TEACHER

If the child is unable to have out-of-school lessons, something can often be done by getting into touch with the music-teacher or general class teacher at school, to find what is being taught, and why, and how the parent can co-operate. If private single lessons cannot be afforded, class lessons often can. The old-time singing class, so often associated with a place of worship, and still, in Scotland and Ireland, not infrequently found, was an admirable little fount of self-activity and musical self-reliance (one might add, of self-respect, in the matter of being able to read Sol-fa). The best, most active modern music-teachers who specialise in work with youngsters have some kind of music-class, and many are establishing class tuition in instrumental playing. If single solo lessons are too dear, alert teachers take three pupils together, each having a short lesson, and those not for the moment engaged in playing, being occupied in observing, writing, and in various kinds of listening that the ingenuity of the teacher devises.

Piano classes for larger numbers have obvious advantages, in being inexpensive, and introducing elements of co-operation and reasonable emulation into a department of teaching with which the system of single private lessons is not commonly animated. As in all class work, special experience is required in the teacher if each child is to get full stimulus, and work solidly all the time. The use of dumb-keyboards has potential dangers, for one can only learn touch when the finger is producing sound. The difficulty in such a class is to give each member sufficient time at the real keyboard; and if there is not a piano at home, progress is bound to be slow. These classes, used only as early-stage aids, and supplemented by as many other musical activities as possible, may be the means of catching and holding for music those who by reason of lack of money are unable, for a time at least, to afford private lessons: and thus, as a link in social service, they may be commended. They will not, of course, be expected to do more than their limitations allow.

In passing, it may be remarked that unfortunately the cost of providing half- or three-quarter-size pianos (comparable to the smaller violins that little people can readily get, to begin on) seems likely always to prevent our offering children this advantage.

I have mentioned the excellent idea of club-meetings, which work in music much as the Scout, Boys' Brigade and similar organisations do in other activities that interest children. One such body is the Music Makers' Guild (Montague House, Russell Square, W.C.). At this address is published a monthly musical magazine for young people, "The Music Student," with its inset, "Panpipes," for smaller children.

In time there will probably be other musical clubs. The most alert teachers will know all about them.

Every child should have access to some kind of *music-class*, whatever his private lessons may be. Thus he is led to think of music on all-fours with the rest of his education, which goes on almost entirely in association with other children. It has too long been a hindrance to musical education that it was treated like nothing else. Give it its healthy, natural place as a humanity, and let it be realised that though a recreation (and few in late life are so rich in resource, and so reassured), it is yet, like every other subject, a matter for hard work. "Easy ways" are plausible, and most of them in music are fallacious. Every alert teacher knows all the easy ways that are worth anything—and knows that, when all of them are used, there remains a healthy farmer's life of digging, planting and sowing for everyone who wants to get into the life of music. There is always room for the dabblers, of course; most of us are happy dabblers in certain subjects. Not every child takes to music like a duck to water, or can profit by advanced instruction; but every child can enjoy it, and ought to be given the chance.

## TESTS FOR MUSICAL APTITUDE.

The increasing use of scientific tests for musical aptitude, and for the capacity to learn, will help us in selecting those who can best profit by advanced instruction. A good brief survey of this subject is in Kwalwasser's "Tests and Measurements in Music" (Birchard, Boston: to be obtained through any good book- or music-shop). A set of six gramophone records, "Measures of Musical Talent," was prepared by the University of Iowa for Mr. Carl Seashore, a pioneer in this department of musical work. His "The Psychology of Musical Talent" (Silver, Burdett, New York, 1919) is a standard text-book. The (Columbia) records, with a manual of instructions for their use, are not, at the time of writing, marketed in England, the exclusive distributors being the C. H. Stoelting Co., 424, N. Homan Avenue, Chicago. These standards of measurement for musical aptitude are in the line of those "intelligence tests" and "vocational tests" which have become well known in our schools of late years. It is not possible here to discuss this idea fully, but it should be noted that tests for aptitude and those for developed musicianship form two separate departments, and that none of them is intended for very young children. Ten or eleven is the age at which they may usefully be applied.

To draw deductions from the simple tests for aptitude is easier than to decide, by any form of standardised test, on the musicianship of more experienced pupils. The chief advantage of attempting the earlier measurements is that they form, together with the teacher's other knowledge of the child's mind and nature, useful indications as to the probable profit of further musical work, and the direction it may most helpfully take. Contrary to the loosely sentimental view, still widely held, scientific investigation proves that one's natural capacities for taking in music cannot be increased. Obstacles can be cleared away, so that those capacities can function to their best advantage; but one is born with, for example, a certain capacity (varying much in different persons) to detect out-of-tuneness; and that capacity can never be exceeded. Practice will not improve the sense of pitch.

The light of science may here appear, as so often, somewhat cold; but is it not far better to accept its truths, and help people to work to the best advantage within their bounds, rather than to waste effort in kicking against Nature's pricks? I see tests and measurements in music (so far too little employed) as among the most potentially useful of the modern teacher's tools. As ever, we must not confuse testing with training, or expect too much of any tests. But, considered in the light of psychology, they can teach us much.

## OF DIPLOMAS, WORTHY AND WORTHLESS.

In a profession that (to the public's discredit) is still as open to charlatans as to genuine educationists, it is natural that there should be a good many poor, insufficiently trained teachers. Most of them are cheap, and many are nasty. But not all cheap teachers are bad. The parent's difficulty is to assess value-for-money. There are thousands of teachers with four-letter diplomas at which the instructed musician either smiles or groans. These diplomas are granted by a number of "colleges," some of which are just limited companies, and a few unlimited; but all are simple commercial bodies, working for profits. There would be no great harm in that, many may think, if their examinations were good enough. But they are not—though they are often conducted by musicians whose diplomas and degrees are worthy. That is one of the weaknesses which the profession is trying to mend; and in that it needs the co-operation of all parents. Those who care to look into the devious ways of commercial music-mongers can read about their past in "Musical Examinations: Dubious" (Curwen, 3*s*.). Though the story is not carried up to the present, there is not much difference to report. Thousands of parents fall innocently into the hands of these bodies and their teaching representatives, every year; and the result is harmful to the art of music, its reputable practitioners, and the child.

There are several ways of avoiding these snares. Most people still take a friend's recommendation; but the friend, in entire good faith, may have engaged a teacher with a worthless diploma. There is one certain way of finding a teacher with recognised qualifications: ask the I.S.M. The Incorporated Society of Musicians, to which at the time of writing over four thousand musicians of all kinds belong, is the one professional body in music which admits to membership only those who prove their qualifications. It does not examine, or offer diplomas. If the advertisement columns of the local paper do not contain the name of its local secretary, a word to the General Secretary, the I.S.M., 19, Berners Street, London, W.1, will bring a list of names of members practising in any given neighbourhood, from which a choice may be made.

The Society receives student-members, and anyone who contemplates going into the musical profession should, for his own sake and the honour of the profession, join it.

As so many "letters" exist, and so great a proportion of them are worthless, I append, from the official Handbook of the I.S.M., a short extract on which anyone seeking a teacher can rely.

(It by no means follows, of course, that if a teacher has no letters at all, he or she is unworthy. Most capable teachers take a good diploma, but I have known a few excellent ones who sturdily refused to bother about it, and, being able learners and teachers, worked up their connection—as, in the long run, everyone must do—by giving good proof, through the musicianship attained by their pupils, of their power to teach.)

The I.S.M., basing its stand on the belief that examinations in music should be conducted solely by bodies avowing a public responsibility, and not run for profit, prints this paragraph :—

" The following Institutions only are recognised by the Society as public examining authorities—

Universities situated in the United Kingdom and their constituent Colleges.
The Royal Academy of Music, London.
The Royal College of Music, London.
The Royal College of Organists, London.
*The Royal Manchester College of Music, Manchester.
The Associated Board of the Royal Academy of Music and the Royal College of Music, London.
The Delegacies of the English and Welsh Universities for the School Certificate Examinations.
*The Birmingham and Midland Institute, Birmingham.
The Guildhall School of Music, London.
The Incorporated London Academy of Music, London.
The Incorporated Staff Sight-Singing College, London.
*The Scottish National Academy of Music, Glasgow.
The Tonic Sol-Fa College, London.
Trinity College of Music, London.

" Institutions marked * offer a diploma examination only to those students who have followed a full course of training in the Institution concerned."

Reliable information as to the worth, or worthlessness, of any diploma can be obtained from the I.S.M.; as to British degrees (Mus.B., Mus.D., etc.), from the Union of Graduates in Music, c/o The University of London, South Kensington, S.W.; and as to overseas degrees (including American) from the Universities Bureau of the British Empire, 88A, Gower Street, W.C.

A mere word about recognised examinations, their use and abuse, may be offered. In the older dispensation, the successes of candidates, redounding to the credit of the teacher, were a ready means of proving his powers. As disciplines and tests of progress, examinations have clear values. But in my experience, which covers a quarter-century of activity in this teaching world, they used to be overdone, and still not infrequently are, though nowadays, in the general reaction against them, they may be too much disparaged. That is the way of the world. The best modern teachers and the best-informed parents realise that not every child gets great benefit from musical examinations. Musicianship (the aim and end of all our training and testing) is extremely difficult to assess in marks, and not all sensitive people (as music-lovers ought to be) can prove their musicianship best in examination-room conditions. Like other choice things of the spirit, music bloweth where it listeth, and we must not put aside as unmusical the child who does not enjoy or respond to examinations. Some enjoy them; but the parent's or teacher's enjoyment should not be confused with the child's. " The Sabbath was made for man . . ."; so it is here; music exists for the child, not the child for any supposed " duty " towards music in its examinational aspect. Let us have no excess of Puritanism in so heartsome a thing as music ! Above all, let us avoid making an industry of examinations. The less music has to do with commerce (and that is the aspect most prominent in worthless " colleges "), the better for us all. It is through its forced association with harmful forms of commerce, in the industry of turning out rubbishy music, that the art has been degraded to the position of a slave in Tin Pan Alley, and sometimes in Fleet Street and Broadcasting House. In passing, I suggest that not always is the radio's or the daily paper's choice of a musician to " boost " comforting to the professional man who knows values. Names are exalted, in the Press or the ether, and rarely is wisdom, equally. Do not put too great faith in the surpassing wisdom of any man, however " eminent " and honest he be. Bees have been known to swarm even in the most musical bonnets. . . .

I have spoken of some factors in choosing a music-teacher. Once you have found a good one, keep in frequent friendly touch with him; and stick to him unless you have clear evidence that he is not playing fair. Treat him as you treat your doctor. It is his business, not yours, to prescribe for the child. He knows best. If you don't trust him, don't engage him. If, having done so, facts put you in serious doubt, tell him you would like a consultation lesson with an expert. There are obvious difficulties, whatever you do. They need not arise once in a thousand times, if you take proper trouble to secure a good teacher at the start. But remember that though a doctor's failures speak for themselves (or rather, are known by the speed and frequency with which they become unable to do so), a bad music-teacher can longer hide his incapacity.

## MUSIC IN SCHOOLS.

I have already suggested wherein lies the chief drawback to the development of musical skill in elementary schools: the right, trained teachers are not often there. Excellent work is quite commonly found in the singing class, and in many years of adjudicating at musical competition festivals I have found, and delighted to praise, heart-warming musicianship proved in the preparation of children for these contests, of which I shall say a little more later. But one cannot generalise from minorities, and we must face the simple fact that very few elementary school teachers are competent to teach music. Unfortunately, their training-college musical work, or what too often passes for it, is rarely worthy, and almost always entirely insufficient. This is the biggest problem that musicians (and still more the general public) have to face. There is plenty of advice in books, there are schemes of work to guide the musically minded; but there are not enough capable teachers. Happily, with the greater freedom that heads of elementary schools are now allowed, much can be done where there is even one teacher with taste and a measure of training, though he is never able to devote as much time to music as its value in mind-training warrants. This aspect of it, though it must here be touched again but in a word, cannot too strongly be urged: though if one *is* urgent about it, some may think one is trying to push aside other subjects, and elevate music out of its proportionate place. That is not the intention; but music has for so long been regarded by the masses as, on the one hand, a recreation, needing no attention, and, on the other, as a subject for musty, endlessly repetitive study (chiefly of scales, and of something set apart from performance, and mysteriously called "theory"), that one may be excused for insisting on its being recognised in this neglected aspect as a general training in thinking and expressing oneself. There are ample proofs of this necessity. Many of them lie to our hand, in the neglect of opera, the poor standard of aural training even in many who come up to the big academies, the inability of most grown-ups to read a tune at sight, the indifference of the public to out-of-tune singing, and other lamentabilities. But we move. In the most conservative quarters of all, music was one day admitted as an alternative subject for a degree examination! It is, even if grudgingly, accepted as a sort of "humanity." Boys at public schools may spend six to eight hours a week at Greek or Latin, and . . . how many? . . . at music. Do they, at fifty, speak, read or write Greek and Latin for their pleasure?—as they might, most of them, have learned to think, read, and express themselves in musical sound, if music had been properly presented to them as a mind-developer as well as a recreation, and a study capable of self-development after school days.

If and when we deeply believe this about music, we shall see that it is properly taught in all sorts of schools—and taught with varying degrees of emphasis and specialisation, to those who show themselves capable of profiting by training to fit them for the numerous mansions of music. Some, that is, can best learn music as singers, others as performers. Some take their highest pleasure in learning to handle the tools of that complex art, composition; others, again, can learn to listen with expert, critical ears, and can serve their brethren, in due course, as amateur or professional expositors of beauties and exposers of shams. The average child in school ought certainly to learn to use his voice clearly in a repertory of good songs, some memorised and some sung from the copy; to be able to read a tune at sight, and to attend intelligently to music performed for him. Two points stand out—that learning music by heart is fine training for the memory (the grown-up layman's most hampering weakness, as a music-lover, commonly lies there); and that approaching staff notation through sol-fa is agreed by the most experienced practitioners to be the quickest, surest plan. All the better if by the age of adolescence the child shall have disciplined and delighted himself by learning to play some instrument so as, in simple pieces, to give pleasure to a judicious ear. Best of all if he shall have learned to take his frequent cheerful part in such music-making with others. The school violin class is a fine means for that.

The matter of teaching sight-reading is not so easy as it may seem. It needs a sound knowledge of all the difficulties and peculiarities inherent in our semi-illogical system of staff notation, as well as experience in the presentation of the matter in logical, correlated, progressive steps, and the constant remembrance of the fact that to test is easy, but to train is not. There is, in all musical work, a danger of too much testing and not enough training. The idea once circulated by a popular musician who ought to have known better, that children can "catch sight-reading like measles," is entirely pernicious.

How necessary in school, then, is the guidance of trained musicians! One of the few cities in England which has shown wisdom in this respect is Manchester, which in 1918 appointed Dr. Walter Carroll its Musical Adviser. The scheme of work by which he makes the most of the material to hand, both in teachers and children, is fully set out in the "Handbook of Music" published by the Manchester Education Committee, Deansgate, at 3*s*. 6*d*. Another good scheme is Sir Arthur Somervell's "The Compleat Teacher" (Boosey, four books, 2*s*. 6*d*. each). The briefest of the able surveys of such elements that I know is Wiseman and Wishart's "The Music Class" (Kerr, 314, Paisley Road, Glasgow, 2*s*. 6*d*.). Such books should be studied by all young teachers, wherever their work is cast. Like several others among the books named, they may profitably be read by parents (even by those who have little knowledge of music) as a guide to modern methods, showing what may reasonably be expected of those who undertake to teach music (apart from instrumental performance) in our elementary schools. The gap between what is desirable and what is generally provided can be estimated from the fact that at the time of writing, in ten training colleges for teachers, the average time given to music in the first two years was between two and two-and-a-half hours *per year!* In the third and fourth years of training, only one college devoted any time at all to it—three hours in the two years!

The foregoing observations apply particularly to elementary school conditions. Obviously, good principles of teaching are the same in all kinds of schools, but there is, in the higher grades, more chance of instruction by specialists. An admirable book which shows what can adequately be attempted and carried through in these higher-grade schools is Margaret Donington's "Music Throughout the Secondary School" (Oxford Press, 2*s*. 6*d*.). It discusses the work from 4 to 18. Dr. T. Wood's "Music and Boyhood" (Oxford Press, 3*s*. 6*d*.) is full of good sense about getting the best out of public-school boys.

## MUSICAL APPRECIATION.

This, almost a modern "Mesopotamia," may be either a blessed or a cursed word. What the term stands for, rightly understood, is pure blessing. But "Appreciation," become fashionable, has not seldom been essayed by incapable enthusiasts, with more sentiment than sense or science. In its full sense "Appreciation" means "appraising, analysing, summing-up." In that sense it is obviously not appropriate, in any full measure, to musical training during elementary-school years—roughly, before adolescence. The looser, more restricted use of the term, implying "enjoyment," would scarcely seem to be necessary, since all good teaching of any subject, at any age, develops enjoyment—most of all when, as has been urged, the child is self-active. Much harm has been done, and many good musicians have been made suspicious of the appreciation movement, because untrained people have tried to teach large-scale works to children quite unable to grasp their complexities. In discussing most educational subjects is would be unnecessary to urge that one cannot teach, and ought not to attempt to teach, anything that one has not learned, assimilated, and been taught how to teach. Unfortunately, sentimentalism and commercialism have combined to inculcate, tacitly or avowedly, the idea that music is not like other studies: that in some unexplained way anyone who is "fond of music" is competent to expound and teach it. Just as competent as the writer, being fascinated by the wonders of astrophysics, is fit to teach it—which is not at all. Music is hampered and misrepresented thus. Most of the greatest works in its literature are long, complex and subtle. There are grand simplicities such as Handel's "Largo" and the Bach "Air on the G string," which yet have their subtleties; but, broadly speaking, they can be taken in by anyone in whom the spirit of music has ever moved at all. There is, too, much teachable matter in them; and it is not necessary to insist that analysis and teaching never spoil a great work, if the teacher knows his business: they only add to the means of enjoyment. But the lengthier masterpieces of music are neither readily assimilable by young minds nor easily teachable; yet they can be enjoyed, and good music that is not too long can profitably be performed to children, so long as we distinguish clearly between teaching it and simply offering it. Even in the latter service—one which no child should lack—we need to give simple, short things first; and our greatest service to the composer and the child is to keep out of the way—to avoid pouring out words. All we need to do is to show that we delight in the music, and to say to the children, "Let us enjoy this together." If the simple truth were only recognised (as it is in other subjects, much less complex than music) that great works are beyond the expository powers of the untrained, much of the argument about "appreciation" would fall to the ground. Consider: a symphony or string quartet may last from twenty to fifty minutes; its four movements, though they are apprehended separately, must be considered as elements of a planned whole. One or more of them may last, say, ten or twelve—even twenty—minutes. How many people can really attend for that length of time? Any elementary treatise on psychology supplies the answer. The symphony will be written on anything from a dozen staves upwards, and twenty different instruments will be engaged. To read and analyse such a score is work for the trained musician; and if one cannot read it, how can he be said even to know what the composer has written, much less to be able to expound it? The logic of such a work is often subtle, its relation of parts extremely complex. Music is, indeed, by far the most elaborate of the arts, and it appeals to the least trained of the senses. It is heard once, and passes: we cannot, as with a picture, stand before it, contemplating and relating detail after detail. That can only adequately be done by possessing the score, and being able to interpret it—to "hear with the eye." It is just in this matter of aural training that the greatest weakness lies, throughout all musical work. One cannot adequately take in complex music unless the ear has been trained. The singing class must be an aural training class, and so must the appreciation class. The foundations must be well and truly laid, and that takes time.

The advent of the pianola, the gramophone, and frequent wireless performances of fine works supplied the tools that were chiefly lacking—the means of getting to know music through repeated hearings at frequent intervals. Musicians have greeted with pleasure these means: not least, the valuable volumes of records illustrating the history of music, prepared by Mr. Percy Scholes (Columbia) and Dr. Curt Sachs (Parlophone).

Personal performance and concert-room experience, supplemented by well-chosen records and radio, allow us all to find out whether we are fit for fine music, and, if we will, to enlarge our experience of it. It is only when turning music on like water or electricity is presumed to take the place of self-activity in making music, and when it is imagined that, armed with a gramophone, anyone can teach "appreciation," that musicians protest, in the name of their art.

No quantity of tools can make a musician, or turn a music-lover into a fit teacher; and the profusion of tools only too readily obscures the truth that the attempt to teach the details of large-scale works to young children is a waste of time.

It is safe to say that in no other department of education could unscientific sentimentalism have penetrated so far or lingered so long. But music remains the happy hunting-ground of the sentimental and the incompetent. In the chemical laboratory or the medical school facts are faced. Would that they were always faced in music!

It may be useful here to quote, as a summary of moderate opinion, the resolution passed at the Anglo-American Music Conference at Lausanne in 1931. This was drawn up by representative British and American teachers, and passed by a large body of their fellows. It is concerned only with the education of children and young persons.

> " The aims of the study of musical appreciation, as we understand it, are (*a*) the development of a high degree of sensitiveness to the medium of the art, and (*b*) an intensive and critical study of representative examples of admitted masterpieces. This implies, first, the ability to hear music in its own terms, and not in terms of association with other experiences; and secondly, an insight into all those factors which constitute style.
>
> " In our opinion, the development of a high degree of sensitiveness to the medium of the art represents the scope of the aural training class, and is primarily the work of the school.
>
> " Let it be clearly understood, however, that at all points in aural training actual examples of the music most appropriate for the purpose must be presented to the class. In this way, aural training and the study of the literature of music are at no time divorced from each other.
>
> " The intensive and critical study of musical masterpieces follows naturally from this foundational training, and is obviously appropriate to more mature students, and entirely unsuitable as a subject in elementary education.
>
> " It is our opinion that the best use of mechanically reproduced music in teaching is in recalling actual experiences gained in the concert-room or in preparing for them. The most adequately equipped teacher of appreciation, however, is the one who is himself a competent performer.
>
> " We believe that all that is here defined as musical appreciation, so far from being in opposition to training in vocal and instrumental performance, is an essential complement of all such training."

The clear musicianship of this resolution befits it to stand as a kind of Minima Carta of music's rights—of the respect due to the art, and to the child. It emphasises what competent teachers knew and practised long before " appreciation " became a more or less specialised branch of work —the necessity of bringing children into constant contact with fine music: of making every music lesson, of whatever kind, a lesson in the appreciation of style in composition and performance; and style, obviously, is best demonstrated by the living, present teacher. The sadly slow and hesitant acceptance of music as a cultural subject on all-fours with any of the " humanities," and the often inferior place allotted to it in schools, make it intensely difficult for the most enthusiastic music-master or mistress to get sufficient time for the various forms of musical activity.

When we are properly taught to listen, instead of letting music idly pass through the mind, listening becomes an activity, a grace, just as much as performance or composition. There is much to be said, even, for occasional less active listening, for music works in varying ways upon the spirit, and it may soothe, at need, without any notable aid from the mind. But the great bulk of listening, in a busy school life, should obviously be directed, controlled, attentively lively listening; and that implies good teaching, by one who has been well trained to teach—and is decently paid. Such able teachers are occasionally found among amateurs, but, for the reasons which I have already adduced, it is not to be expected that the great majority of general school teachers can tackle complex music, or even understand much of it themselves. In teaching children the elements of reading music, of using their voices simply and naturally, and of thinking intelligently about what is sung, such teachers can do their most satisfying and repaying work —not a little of it (notably work for Festivals), one may appreciatively remark in passing, done outside school hours.

The long and short of all music teaching is that it should be treated like any other subject, and not attempted by any who have not been adequately trained in that special work. There is perhaps no harm in gently insisting that the ability to perform music has not necessarily anything to do with the capacity to teach it. The vast weakness in our elementary schools is that music teaching is too often left to some willing person who may be more or less "musical," but who is in no sense fit to teach music. We have not, in England, anything like the American system of elementary (there called "public") school music supervisors, there being in England fewer of these than can be counted on the fingers, whilst America has many thousands, besides visiting musicians teaching in the schools. Scotland, as in so many ways in education, makes a much better, though still not fully adequate, showing. It has occasionally been urged that, since there is no immediate prospect of getting trained music-teachers into most elementary schools, we ought to encourage *any* of the teachers already working there who care to try their hands, to teach "appreciation." All one need ask is whether that would be done, in the name of education, in any subject of equal complexity and specialised scope? And music is not quite on the same plane as other subjects, for several reasons. One is that it is essentially a thing of beauty, easily spoiled by wrong handling—as when, for instance, an inexpert teacher attempts to "explain" the meaning of great music that has no story, or confusingly analyses, and so prevents the children's "seeing the wood for the trees." Another reason is that music is a language which has to be apprehended, and taught, in its own terms, not in those of other arts: therein, as has been said, lies its chief subtlety and difficulty. There is an admirable word of Sir John McEwen's which I like to quote: "While language tries to convey a meaning, *music is itself the meaning*." Children often like to pictorialise music: a good deal that is specially written for them to play has attractive titles. They like stories of musicians' lives. All this is natural enough; but the great work in "appreciation" teaching worthy of the name, and worthy of music as an art, is to get from this stage to the much more important platform upon which "absolute" music lives its life in its own terms, without poetical title, story, or pictorial aids. Even when a great work has a title, too much is commonly made of it by the semi-musical. Beethoven's "Eroica" symphony is not a cinema film in sound. True, the composer meant it as a tribute to Napoleon, but only the very superficial would find in the music the story of the conqueror's career. It is simply the heroic in terms of music's life, and no other. Hundreds of other symphonies have no titles, and they are only impoverished and degraded when people who do not know the meaning of true education and are not really musical propose titles and invent stories for them. This kind of foolishness infuriates musicians. It is meant as a prop for the unmusical, but it is repugnant to any cultivated music-lover, and abominably unfair to the composer, whose music was for him "itself the meaning." If we cannot find that meaning, there is plenty of smaller music for us to play about amongst. If in good time we bring ourselves nearer the measure of the stature of the great composer, and apprehend his work in its own terms, well and good; if not, we can console ourselves by realising that music is only one of life's pleasures, and that we cannot all expect to be fit for everything. Indeed, the superficial generalising of many who pour out music like water nowadays—especially by radio—is apt to make many people forget that, after all, not everyone is fit for great music, either by natural aptitude or by temperament and training. Not everyone, even, has good taste, or ever will have. Augustine Birrell's commonsense is worth remembering: "You may as well expect to be born with a silk hat on your head as with good taste. Good taste means discipline . . ."—and discipline is not popular nowadays. But what is life worth without it?

There is no contact so good, because so immediate and impressive, as that of the living, present performer. That is why it is so desirable that the music-teacher should be able to illustrate with his own hands or voice. Out-of-school orchestral concerts are excellent, if the talk be reduced to a minimum, and given by the right person. There should as often as possible be previous self-active classroom preparation. In addition to the concerts which the children will give themselves at term-end and other occasions, inexpensive programmes, performed in school by visiting artists of the first order, can be arranged through the Music Development (Solo Performers') Section of the Incorporated Society of Musicians (particulars from 19, Berners Street, W.). Informal half-hours of music, self-made or from a reproducing instrument, can be very helpful. Single movements only of sonatas and symphonies should be administered to those of tender years. As we have noted, the mind, even of the grown-up, is capable of real, profitable attention for a very short time at a sitting. Later can be offered a pair of contrasted movements. Let this, like all teaching, be graduated, and be on the sound plan of small doses, oft repeated. Put aside some time, however short, for recreative listening, always to good, but not necessarily to heavy, works; and let the children choose such music, within wide limits. Do not worry them about " taste." Start from where you find them, and take it for granted that they are willing to become civilised. Above all, respect their minds. It is foolish to under-estimate either children's power to learn or their willingness. No one should teach without the basis of sound psychological knowledge; and it is a crime to attempt to teach, in music, anything one has not oneself fully grasped. To teach, say, arithmetic, knowing one problem ahead of the class, is to some extent possible, however undesirable. Not so with music. One must know a lot to teach a little. Particularly is this true of long, complex, subtle works.

Teaching by analogy is familiar, and often valuable, as in other subjects. It should be marked, however, that it is most useful in teaching musical *facts*, not fancies; and that nearly all analogies between music and other arts are false. " Pretty picture " teaching is largely wasteful. " What does this symphony remind you of ? " may lead anywhere : in the end, nowhere.

Anything worth calling by the name of " Appreciation," then, is difficult to teach. Commercial considerations have made it appear easy. It *is* easy to turn on radio or gramophone, and divide attention between the music and a stream of beautiful talk about it. It is also lazy, and essentially unmusical.

Until we get in the schools more trained musician-teachers, let us, then, spend the all too short music lessons most profitably, in laying sound foundations of sight reading and singing, abilities which can be developed in after-school life; include listening-for-pure-pleasure, and encourage the children to do that, also, by radio at home. Here is an example of what the ordinary teacher can do. I draw it from a most stimulating article by a Scots elementary schoolmaster whose certificate, when he left college, was marked " Music—Unsatisfactory." But he loved poetry, and believed in planting seeds hopefully. He worked, with boys at the difficult early adolescent stage, from twelve to fourteen, on the knowledge that self-expression then must neither be dammed nor forced, and on the sometimes insufficiently well-remembered fact that the attitude of children towards a subject is the attitude of the teacher towards it. " So in my class in school," he says, " it is held no crime to entertain each other by singing, by whistling, or by playing on the mouth-organ "—this in frequent five-minute intervals between formal lessons on other subjects. Some will recite a few stanzas of poetry; one or two, having private lessons on the violin, will now and again bring their instrument, using it in just the spirit in which anyone in a chance gathering at the home fireside or in a country pub might " oblige the company." This teacher sums up : " I am not teaching music, but the love of it. Hearing music . . . is not sufficient. Each one of my boys is encouraged to *make* music. . . . So each one finds that he can produce something beautiful. . . ."

Public schools now tackle, often with remarkable success, oratorios such as " Elijah " and even the Bach " Mass." A term spent in getting to the heart of the composer's method and mind, by rehearsing such works under an enthusiast, is worth all the vague talk about music or book-reading ever indulged in, unaccompanied by personal participation.

Books on " Appreciation " are legion. Many of them are written by people who have not spent their lives in dealing with children. These theorists abound, and their books often make pretty reading; but ask the practical teacher about them ! One or two excellent books, well worth reading for their musicianly outlook, are Stewart Macpherson's " The Appreciation Class " (Williams, 4*s*.), Foxell's " Elements of Musical Appreciation " (Novello, 2*s*. 6*d*.), and Calvocoressi's " Musical Taste " (Oxford Press, 2*s*. 6*d*.).

Among " methods " of learning to be musical through self-activity, two stand out : Macpherson and Read's "Aural Training based on Musical Appreciation" (Williams, three volumes: I, 5*s.*; II and III, 7*s.* each) and Mabel Chamberlain's "Ear Training" (including appreciation and rhythmic movements) (Novello, 6*s.*). Musicians, born idealists, rarely agree on the perfection of anyone's method (even if they have not written one themselves); but both of these are made by practical workers, of first-class experience. In naming, here and elsewhere, a few books apt for study, I make no attempt to be comprehensive. These are not necessarily the "best," and only the best; and others not mentioned are not thereby depreciated. A musician's advice as to books should be taken where it is available. I merely name a few because that advice is sometimes not readily to be had. A book particularly valuable to self-teachers, the scope of which is indicated by its title, is Annie Lawton's "Foundations of Practical Ear Training" (Oxford Press, two volumes, 4*s.* 6*d.* and 2*s.*).

"The Good Musician" (a series, in progress as I write) is "a pupil's course leading to the understanding and enjoyment of music," by Easson, McCrone and Chamberlain (Novello, 1*s.* each book). It gives companionable help in preparing for School Leaving and Matriculation examinations. It is not necessary to emphasise the fact that those beyond the early stages of pupilage may gain much from studying a logical method such as this. The young trainer's chief weakness is in logical method: he does not know what to do next.

I have stressed the need in all teachers for psychological knowledge. If some of the standard books on the working of the mind have been read, all the better. The best book about music-teaching, in this respect, is the late Mrs. Curwen's "Psychology Applied to Music Teaching" (Curwen, 10*s.* 6*d.*). Frank Howes's "The Borderland of Music and Psychology" is a good English introduction to its subject.

## TRAINING CHOIRS.

Amateurs often have to train choirs. The best way to learn to do that is by first being a chorister, and then standing by a master whilst he trains a choir, and gradually taking a hand oneself, first under his eye and then as his deputy. Such experience needs little addition from books, if the master knows his job inside out. But many cannot go through this best of mills. For them, "The Amateur Choir Trainer," by Henry Coleman (Oxford Press, 3*s.* 6*d.*) is the very thing. Harvey Grace's "A Handbook for Choralists" (Novello, 1*s.* 6*d.*) serves both sides of the rostrum equally well. Its valuable shilling supplement is "Twenty-Four Studies in Sight-Singing for Mixed Voices." The simplest, shortest and cheapest book for the beginning conductor is Coleman's "Choral Conducting" (Oxford, 1*s.*). It is shaped for the needs of those who courageously take up the stick in women's institutes, but the elements of good sense and style are the same for all. There are other books, but it is better to stick to one or two and master them, rather than run from one to another and absorb no system. In the end you will make your own, and it will be the best for you—if you have worked it out for yourself.

## ADOLESCENT SINGING.

This is a curious battle-ground. Musicians are divided as to whether children should sing when the voice is changing: more strictly, the main dispute is: how far shall the child then sing?—for few would prohibit his doing so entirely; or rather, try to: how can most children be prevented from singing if they want to? Going further, one asks how they are prevented from shouting at play. That puts a greater strain on the adapting mechanism than gentle singing ever can. My own conclusion is that very gentle, guided singing through the adolescent period does no harm, and may be the means of the youth's keeping up interest in music. There is the social as well as the vocal side to think of. We all know how church choir-boys tend to lose connection with the work into which they have often put so much unselfish effort, when their voices become for a time unfit for hard use. They should drop any competitive singing, avoid the slightest strain in compass or volume; in a word, use all gently. At this age they are quite sensible enough to understand the reasons for this. Back up their interest in music, and their ability to make it in any other way, by every means at this time. It should be remembered, by the way, that the Boy Scouts have a musical side, which can help to maintain touch with activity during the time when full singing is wisely taboo. Turn the musical keenness into another channel for a time; do not dam it up in one direction without encouraging its flow in another. That is the way potential adult music-lovers are made or lost. These years are critical, for art as for ethics. If we can keep hold of the young music-maker then, we may hold him for life.

## MUSICAL FESTIVALS.

These are of two kinds, competitive and non-competitive. We are all, willy-nilly, competitors in life; but we can also be co-operators. How to blend the two is the social problem of our modern world. It exists in music too. Should children enter for competitions? Do teachers like them? As always, whate'er is best administered is best. Some teachers dislike their pupils entering competitions because they fear loss of prestige in case of failure. These have not got into the proper friendly touch with parents. Competitions are musical sport, and we are a sporting nation. Taken in the pupil's stride, like examinations, not perpetually crammed for to the exclusion of the acquirement of a repertory, they may be entirely beneficial. Pupils and teachers get an independent judgment from a sound general practitioner: sometimes from an expert in some special branch. (It is a pity that lack of funds often prevents festival committees from engaging more specialising experts; but a great many G.P.s can give shrewd advice on several kinds of performance.) Everything depends on getting the right spirit towards the festival, which is essentially an act of happy faith in co-operative music-making, and towards one's fellow-competitors, be they teachers or students. We learn to lose with a good grace, and to win with modesty; and a teacher who cannot, with the help of the parent, infuse that spirit into a pupil, has missed the mark. A good motto for all who compete is the Quaker's: "Do thy best, and rejoice when thy neighbour shows thee how to do better."

A few hints. As in examinations, the teacher should be the sole judge of a pupil's fitness for entry, having regard to the plan of work he wishes him to pursue. A competition may march with, or troublesomely interfere with it. If he is in doubt as to the student's fitness, he can often get another friendly teacher's independent opinion (young teachers should keep in touch with their former masters: an opinion about a pupil from one who knows the teacher's methods and nature is often extremely helpful). If the right sporting spirit is blended with fit respect for music as an art, there should be no difficulty in deciding whether or not to enter. The matter must not be thought of as one of life and death; and personal vaunting must be discouraged. The only question is, "Can I fittingly interpret the composer's thoughts?" The ordeal of performing in public is for most students valuable. It can be made lighter if the teacher has knowledge of the right psychological approach, one important element of which is never to suggest fear, and to avoid negative thoughts: not "I'm not afraid," but "I am confident." It is astonishing how many people will tell someone, in a child's hearing, that "Of course he's a nervous little chap." He ought never to hear the word "nerves." By the way, a few good long breaths, just before going on the platform, help to steady one. After that, no thoughts of self. Nervousness is really selfishness. Thinking of the audience means considering what effect *you* are making on them. All that concerns you is making the composer's beauties plain—enjoying them. If you rightly do that, others will enjoy too.

Listen to the other competitors, and to the judge's remarks on all. You will learn much: mostly, how to do things; sometimes, how not to do them. It is all profitable, and costs nothing. Wherever in the list you come out, enter again, to get a different opinion. After a few years, striking an average, you can be quite clear where you stand, and why. Work to strengthen weaknesses thus discovered.

If there is massed singing, and you are eligible to join, never fail to do so. The excellent custom is growing of setting one or two pieces to be learned by all choirs, not in competition. It is a pity that lack of time prevents the universal adoption of this wholesome plan. The non-competitive idea is carried out more fully in a type of festival that at the time of writing is increasing in number. Here there are judgments, but no marks or placings. Where marks are given, the modern (and, as most judges feel, the most musicianly as well as the time-saving) method is to divide the hundred total into fifty for " Proficiency " and fifty for " Interpretation." Remember that the difference between being first and second is often a matter of a single mark, and that there are occasions on which (as the judge will often say) another musician might have placed his No. 1 second and No. 2 first. The result is not life and death ! The festival, then, is simply a sporting opportunity to get a cheap lesson—and sometimes a heap of other little lessons, free. Embrace it; and don't forget to listen to performers on other instruments than yours. Pianists can learn much from good fiddlers, and fiddlers from singers. Seek always the secrets of style, and the festival may become one of the strongest ladders in your musical development.

A useful cheap series of a dozen or so shilling " Festival Booklets," each giving an expert adjudicator's advice on some branch of work, is published by Paterson.

## MAXIMS AND MEMORANDA.

Too easy, plausible generalisations are seldom nourishing, or even true, but a few final reminders, fruits of experience, may perhaps be worth tasting.

*Music for its own sake.* This is a reminder given because of the tendency in this country to make music in the name of all manner of other activities—charitable deeds, politics, various supposed " duties," and so on. These deeds may all be worthy; but besides making music an essential, natural part of education, let us keep at least a goodly corner for " music for its own sake," without regard to any other activity. In the long run, what is the use of music unless one makes it or listens to it for pure pleasure?

" *Who is to perform ?* " *or* " *What is to be performed ?* " This is partly an aspect of " Music for its own sake." " Celebrity " concerts work both good and harm. We are all hero-worshippers. and there is some gratification to musicians in finding that their kind, as well as sportsmen and film stars, can be heroes. But putting the cart before the horse always works harm. The real music-lover goes to a concert, first and foremost, to hear the music, and secondly to enjoy its fine performance. So the first of the questions at the head of this paragraph is not the more important. But hero-worship may be a channel through which some may be led to love music for its own sake, It should therefore not be snubbed and discouraged : only treated as a means to a greater end.

*Music in its own terms.* This has been touched on earlier. It is the purest form of musical thinking, the result of hard work at self-culture. The capacity to think of music in its own terms, and not in those of any other form of life, is one of the surest signs of the real musician.

*First the thing, then the name, then the sign.* This familiar educational maxim is a handy test for musical " methods." A surprising number of text-books fail to pass the test. It also offers the readiest pointer to the proper use of theory- and scale-books, and, indeed, all books about music and music-making : the " thing," of course, being sound—music itself. (Incidentally, as to " methods," approach with caution any that are highly praised by the daily Press.)

*What is our chief national weakness in art ?* The lack of freedom in self-expression. It is rarely easy to teach that freedom. Inexperienced teachers may merely encourage smugness, cheap imitation, or over-emphasis. It is necessary to have something to express. Work at amateur dramatics or operatics is valuable. It often helps to free the spirit.

*Two master-essentials for the musician.* To hear with the eye and see with the ear.